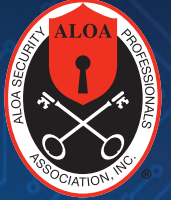


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20/20 Vision....to Sell More Quality Safes.



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Mission Statement: The mission of the ALOA Security Professionals Association, Inc., as dedicated members of the security industry, is to ensure professional excellence and ethics; create a public demand for professional locksmith services; represent and speak for the locksmith industry; and expand the exchange of trade information and knowledge with other security-related organizations to preserve and enhance the security industry.

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Get Connected With ALOA

I HOPE ALL OF YOU HAVE HAD great starts to the new year!

In this issue, we have coverage on electronic access control in some of our feature articles. This is an area of the security industry that is ever expanding. As customers become more educated on the available options, the more they're starting to specify this kind of hardware in their buildings and homes. And, guess what? It's our job to educate them. This means that you, too, need to be educated on electronic access control, and ALOA Education classes are a great place to start.

Whether you learn about single residential locks that are network connected and app accessible or elaborate commercial systems with dozens or hundreds of entry points, you should probably know about at least some of the available technology. This also goes for safe locks that are network connected (see page 28 for some tips on educating customers on those products). At SAFETECH this year, we've added several new classes on electronic safe locks. Take a look at the brochure included with this issue of Keynotes for the full class descriptions and to see what else is in store for you at the convention. Registration is open, so hurry to get your first choice of classes.

The 2020 ALOA Convention & Security Expo in Kansas City is just on the horizon as well, so be sure to save the dates of July 19-25. There, you will also have a chance at taking some electronic access control classes. The final class list hasn't yet been confirmed, but look for that information soon online and in *Keynotes*.

And if you want some free education, you really need to be reading Noel Flynn's business article series! He has been providing some excellent tactical knowledge that you can immediately apply to your own business operations. For those of us who are business owners, it's not enough to be the a knowledgeable and prepared security professional; you also have to know how to efficiently and strategically run your business, or else you're not going to be able to stay in business. So read up, and consider taking some business classes with us at SAFETECH or ALOA.

Connecting With ALOA

We are always looking for ways to better serve our members and build relationships. It's no secret that membership organizations across all industries often struggle to retain and recruit new members, and ALOA has historically been no different.

We are developing new ways to improve membership via recruitment, processing and better communication. These are all in the early stages, but if you have any ideas or concerns, please feel free to share them with me or ALOA staff members. We want to make sure that ALOA is operating in the most beneficial ways possible. After all, this organization belongs to all of us. Providing feedback helps us keep the organization on track with a happy membership base.

You may have noticed that ALOA has also increased its use of social media for sharing information and communicating with members. Please do follow our



accounts on Facebook and Twitter, interact with other members via them and feel free to start conversations. We want our members to be and feel more connected to ALOA, and it's also just enjoyable to be able to interact with fellow locksmiths worldwide on a daily basis. Find us on Facebook at www.Facebook.com/ALOA.org, and our Twitter handle is @ALOAlocksmiths.

Thank you for all that you do to make this association such a great one to be a part of. Let us know how we're doing at president@aloea.org and/or membership@aloea.org.

Respectfully,

Jim Wiedman, CML
President
ALOA Security Professionals
Association, Inc.
president@aloea.org

Make 2020 an Educational Year

AS A MEMBERSHIP ORGANIZATION, ALOA SPAI is tasked with meeting the needs of our members and serving the security industry overall as best we can. To do so, we rely on research and the input of our board, but most importantly, we listen to our members. Formally, we conduct surveys and collect evaluation forms from students, but informally, we just listen. We talk to attendees at conventions and classes. We email back and forth with members. We gather input from ALOA chapters and affiliates, and we talk to members who call us.

By far the greatest request and need that we hear is for training and education. As this is what ALOA members want the association to focus on, that's often where we direct our greatest efforts (but we do provide many benefits, such as our new insurance program; email membership@aloa.org for more information).

Our Focus on Education

We've updated our education program recently, including adding and refreshing classes. We've enabled candidates to take certain PRP tests online from the comfort of their homes or offices, and we'll continue to update the PRP to make it more relevant for our members.

ALOA and SAVTA continue to add classes as well. Last year, we heard from SAFETECH attendees that they wanted more business classes to help them thrive financially. This year, we have several new business classes at SAFETECH covering topics such as digital marketing and QuickBooks, and at ALOA 2020 in

Kansas City, we'll be adding new classes as well. We're finalizing the schedule now, so look for more information in *Keynotes* and online soon.

Take a look at the SAFETECH brochure included in this issue to pick your classes for Tulsa in April. If you've thought about adding safe and vault or safety deposit box work to your skill set, this is the event for you. Also mark your calendars for ALOA and check out the ALOA preview brochure that's also included with this issue.

Next year, we'll hold our IAIL Forensic Conference in conjunction with SAFETECH. This is a great value for attendees, as it reduces costs and expands your access to more classes. Look for more information in the coming months.

Keep in mind that the ALOA Scholarship Foundation offers scholarships to SAFETECH, the ALOA Convention and other qualified classes. Go to www.ALOA.org/ASF for more information and an application.

Setting Your Goals for 2020

While you're thinking about education, consider making one of your goals for this year to be adding new skills. Increasing your skill set makes you more employable and can attract new customers to your business — and increase business from current customers as well. Start mapping out what conventions you'd like to go to this year, and keep the ALOA and SAFETECH dates on your calendars.

But while education is important, so are other things. Even if you're not taking classes, consider attending some conventions on a more casual basis, too.



Network, swap tips and stories with other attendees, make new friends and just enjoy your time with fellow locksmiths. Sometimes simply spending time with others who can relate to your daily successes and challenges is incredibly fulfilling. Enjoy being a part of the industry!

At the same time, work isn't everything. Especially for those of you who have been in the industry a long time, remember to enjoy life and all of the little moments we have an opportunity to experience each day. If you're considering slowing down a bit, take a look at Claire Cohen's article on page 30 and see how you can perhaps keep your toes in the industry while taking more time for yourself.

No matter what your goals are for 2020, I wish you well in your pursuit of them. Thank you again for being a part of ALOA, and have a prosperous year!

Mary A. May

Mary A. May
Executive Director
mary@aloa.org

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Register for SAFETECH!

SAFETECH REGISTRATION IS OPEN, AND CLASSES ARE QUICKLY FILLING. Have you made your plans to attend yet? See the brochure included with this issue of *Keynotes* to find out detailed information on classes, events, the tradeshow and more. The Main Event column on page 14 also has more details.

Questions? Contact conventions@aloe.org or call (800) 532-2562, ext. 101.



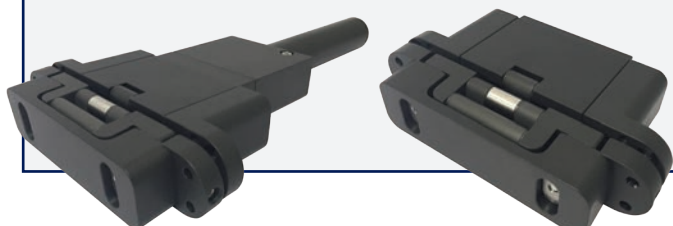
Get Your ALOA Board Nominations In

THINKING OF RUNNING FOR THE ALOA BOARD THIS YEAR? BE SURE TO get your nomination forms in by March 1. This year's elections include the following positions: Secretary, Northeast Director, South Central Director, Northwest Director and two International Directors.

For questions or to receive nomination forms, contact membership@aloe.org or secretary@aloe.org.

PRODUCT BRIEF

» **D&D Technologies** recently introduced its ConcealFit Closer and Hinge Set, a hydraulic concealed closer and hinge set in an all-in-one combination. It's suitable for interior and exterior applications for both doors and gates. For door applications, ConcealFit includes four positional adjustments: lateral, vertical, depth and inclination and has adjustable closing speed, latching speed and backcheck. It features a UL10C fire rating, is suitable for ADA use and is applicable for wood, hollow metal and fiberglass doors. It has been tested to over 500,000 open/close cycles, closes doors up to 220 lbs. and can be used on both left- and right-handed single-swing doors.



GPLA Names New Officers



IN JANUARY, THE GREATER PHILADELPHIA LOCKSMITH Association swore in its new set of officers and board of directors for the 2020 to 2021 term. The following comprise the new set of leaders: president — Sven Hellwig Sr.; vice president — Maurice Onraet; corresponding secretary — John Williams; recording secretary — Cliff Shafer; sergeant at arms — Orvis Kline; board of directors — Murray Bilker, Edward Fitzgerald, Jim Handschuh, Paul Kline, Joe Reustle and Barry Wilensky.

Congratulations to the new leadership, and thank you to the outgoing officers and directors!



More than 50 people attended the MLA meeting in December and collected many items for the Toys For Tots drive.

Merry and Bright in Massachusetts

ALOA PAST PRESIDENT TOM Foxwell attended the Massachusetts Locksmith Association in December to swear in the new officers and meet with members. Following is a first-person recap from him.

As past president of ALOA, I have had the opportunity to travel and visit with many of our members both in the U.S. and internationally. But last December, I was given a great Christmas gift from the Massachusetts Locksmith Association (MLA): I was invited to attend their annual Christmas meeting and honored with swearing in their newly elected officers.

I was picked up at the airport by Joey Dalessio and taken to see David Dalessio and his store. It was a real treat to be able to stop in and see the Artery Lock Service facility and meet all of his employees. From there, we went to the meeting hall and helped set up for the Christmas dinner meeting. I was very impressed by the amount of members who showed up to assist in getting everything ready for this event.

I had no idea how many members there are in this association and was very happy to see more than 50 people attend. As many other associations are downsizing and having trouble pulling

in members for their meetings, it was good to see this great turnout. I was impressed by the amount of awards given out to the people who had made special efforts to assist the association during the year.

They also held a Toys for Tots collection, and there were a lot of toys to give to the U.S. Marine Corps for their drive. For my part of the meeting program, I was honored to be able to swear in about 20 elected officials who will be helping to guide this association for the next year.

Thank you to the MLA for a wonderful event, and my best wishes to all of you in your association.

IN MEMORIAM



» **Thomas J. Newton Jr., CML, CPS**, of A Ace Lock & Key Service in Las Vegas has passed away. He had been a member of ALOA since 1970 and a SAVTA member since 1993.

NEWS BRIEF



IDN-Canada
has released its

2019-2020 Edition Product Catalogue. It features many new products in electronics, accessibility, automotive, key systems and residential and commercial door hardware. Catalogues are available at each of its Canada locations, and current information can also be found online at www.idn-inc.ca.



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N. Venice

- **Bryan Kruysman**
Suncoast Safe & Lock

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TEXAS

Denton

- **James M. Moulden**
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CRL

- **Yanir Azulay, CRL**
Chicago, IL

We Need Your Help**Attention, ALOA Members:**

Help us eliminate the industry scammer problem by screening these applicants, who are scheduled for clearance as ALOA members, to ensure they meet the standards of ALOA's Code of Ethics. Protests, if any, must be made within 30 days of this *Keynotes* issue date, addressed to the ALOA membership department, signed and submitted via e-mail to membership@aloea.org or via fax to 214-819-9736. For questions, contact Kevin Wesley, membership manager, at Kevin@aloea.org or (214) 819-9733, ext. 219.

CALENDAR

For a complete calendar of events, visit www.aloea.org.

FEBRUARY

February 3-8

Six-Day Locksmithing Fundamentals

ALOA Training Center, Dallas, TX
education@aloea.org or
(800) 532-2562, ext. 101

February 5-7

IML Security Expo
Sheraton Downtown
Salt Lake City, UT
www.imlss.com

MARCH

March 4-6

IML Security Expo
Universal City Hilton
Universal City, CA
www.imlss.com

APRIL

April 24-25

Just Cars
Caribe Royale Orlando
Orlando, FL
justcars.us

April 27-May 2

SAFETECH 2020

Hyatt Regency Tulsa
Tulsa, OK
education@aloea.org or
(800) 532-2562, ext. 101

MAY

May 18-23

Six-Day Locksmithing Fundamentals
ALOA Training Center, Dallas, TX
education@aloea.org or
(800) 532-2562, ext. 101

JUNE

June 10-12

IML Security Expo
Talking Stick Resort and Casino
Scottsdale, AZ
www.imlss.com

JULY

July 19-25

ALOA Convention & Security Expo
Kansas City Convention Center
Kansas City, MO
conventions@aloea.org or
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Congratulations to Our CFLs!

Division President **Tom Demont** lists the recent CFLs and urges you get your credential, too.

AS WE EMBRACE THE NEW EDUCATIONAL YEAR WITH SO MUCH TO DO and so little time to do it, start planning classes for your certified forensic locksmith (CFL) exam now. Forensics I & II for safe techs, which is a two-day class, will be held at the SAFETECH convention in Tulsa, OK, this April so safe and vault technicians can complete this mandatory requirement on the road to earning their CFLs in Safes and Vaults. All SAVTA members are encouraged to sign up and take the CFL Safes and Vaults exam in Tulsa after class. To date, we have had 41 safe techs complete the two-day class to begin earning their CFLs.

If you think a career in forensics is something that sparks your interest, then plan to attend SAFETECH in Tulsa or ALOA 2020 in Kansas City this July. At both conventions, you have an opportunity to complete specific CFL class requirements. Or you can attend the IAIL conference in 2021 at SAFETECH. That's right, we are piggybacking our forensics classes starting in 2021.

Any IAIL member can sit for any of the four CFL exams at any time. Once you test

and pass the exam, you have one year to complete the remainder of your requirements to be awarded your CFL certificate and photo ID card. If you don't complete all the requirements, you must take the exam again.

The chart to the left shows those who passed their exam and were awarded CFLs in 2019.

As you can see from the list of new CFLs, we had a bumper crop in 2019. We wish all our new CFLs much success with their investigative work and hope that they have a prosperous 2020. "Awarded" means that they have completed all the requirements to receive their certificate. The year 2021 is when they will need to recertify to keep their CFL active.

If you have any questions, suggestions or ideas, please contact me directly at IAILPresident@aloea.org.



Tom Resciniti Demont,
AHC, CAI, CFDI, CFL, CMIL,
CML, CMST, ICML, IFDI,
LSFDI, ARL. President, International Association of Investigative Locksmiths.

IAILPresident@aloea.org

Get Published!

IAIL members: Submit your articles for the Investigative Spotlight department. Send your information to Ross Squire at ross@abcforensic.com.

Name	Member Number	Status	Expiration
Andrew Alchin	820	Awarded	2021
Dustin Black	2369	Awarded	2021
John Bradshaw	691	Awarded	2021
Robert Cullum	2364	Awarded	2021
Chris Dichiaro	2276	Awarded	2021
Jim Hancock	330	Awarded	2021
Patrick Hollis	824	Awarded	2021
Elaad Israeli	2357	Awarded	2021
Chad Kahle	2159	Awarded	2021
David McFarland	2366	Awarded	2021
Mike McGee	735	Awarded	2021
Hans Mejlshede	37	Awarded	2021
Max Squire	2363	Awarded	2021
Jeffrey Stark	2233	Awarded	2021
Beta Tam	2337	Awarded	2021
John Truempy	505	Awarded	2021
Daniel VanDenburgh	2375	Awarded	2021
Kevin Wilson	2365	Awarded	2021

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Classes are quickly filling up, so send in your registration now.

ARE YOU READY TO GET YOUR CAREER ON THE ROUTE TO SUCCESS? Join us in Tulsa, OK, April 27 to May 2 for the industry's best week all year for safe and vault education, networking and access to new products. Registration is open, so take a look at the full brochure included with this issue (SAVTA members received theirs with the January/February issue of *Safe & Vault Technology*), or go online to SAVTA.org.

Classes

Whether you're a beginner or have a good deal of safe and vault experience, there are classes for you at SAFETECH 2020. Several new classes have been added this year, including ones on growing your business, QuickBooks accounting and safe repair. Six new electronic lock classes cover everything from spiking to manufacturer-specific locks such as AMSEC, LA GARD/Kaba, S&G and Tecnosicurezza.

Location and Things to Do

Tulsa has a great array of activities for the whole family, and our venue, the Hyatt Regency Tulsa, is centrally located in downtown. There's a ton of nearby shopping venues and numerous restaurants within walking distance in all price points. (Don't miss Hurts Donuts!)

One dining opportunity you don't want to miss is The Vault. Located within a five-minute walk of the hotel, this gem serves up classic American fare and craft cocktails, but the décor will impress you just as much. Elegantly decorated in mid-century

modern style, the restaurant is a converted 1950s building that was originally — you guessed it — a bank. At one time, it was the world's largest auto bank, complete with six lanes. And, yes, the vault remains.

Travel

Be sure to book your hotel room at the Hyatt Regency Tulsa before they sell out! Rooms, which are only \$129 per night, can be secured by calling the hotel toll-free at (888) 591-1234 or at (918) 582-9000 and using the group name "SAVTA" or "SAFETECH." Reservations can also be made online using the hotel link under the Convention tab on SAVTA.org.

Complimentary 24-hour shuttle service to and from the airport is offered by the Hyatt Regency Tulsa. The hotel also offers complimentary round-trip shuttle transportation from the hotel to downtown neighborhoods for dining, shopping and entertainment.



At SAFETECH in Tulsa, take classes, network and discover new products at the tradeshow.



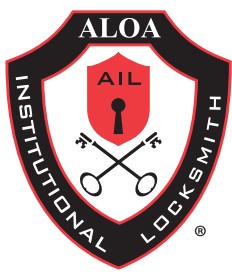
Save the date for ALOA 2020 in Kansas City in July!
More registration information is coming soon.

2020 ALOA Convention & Security Expo

While SAFETECH is just around the corner, be sure that ALOA 2020 is on your calendar as well. We'll be in Kansas City, MO, July 19-25, where you'll get to heat up your career by learning new skills, making new connections and seeing all the latest products that can help your business succeed. Take a look at the ALOA Convention & Security Expo brochure included with this issue of the magazine to see sample classes and some of the exhibitors you'll interact with at the Security Expo.

This year's host hotel is the new Loews Kansas City hotel, which connects directly to the Kansas City Convention Center. Reservations can be made by calling the hotel directly at (888) 576-6807 and using the group name "Association Locksmith." Or, go to ALOA.org to the Convention Hotel tab to register online. The cutoff date for hotel reservations is June 29, but they could sell out sooner. Call now to secure your room.

For more information, visit ALOA.org and click on the ALOA Convention tab. ☺



Three Neglected Fundamentals of Physical Security

Institutional locksmiths should pay more attention to key audits, policies and hardware guidelines. **By Steve B. Fryman, CRL, CAI, CISM**

KEY AUDITS, POLICIES AND HARDWARE GUIDELINES RECEIVE LITTLE attention, but they are so important. They are the Rodney Dangerfields of the physical security world: no respect. That was the famous comic's tagline. Dangerfield would say his mother needed to tie a pork chop around his neck for the dog to play with him.

Key Audits

These two words together are both terrifying and daunting, like root canal. They are both time-consuming and uncomfortable. Hopefully your records are true and accurate, because without good records, there is no point to even starting an audit.

There is no question that once keys leave your hands, they will be passed around like a family heirloom. Therefore, consequences should be developed and rooted in policies (which we will also talk about shortly).

What Are We Looking for in a Key Audit?

- Does the person who was originally issued the key as the requestor still have the key in his or her possession?
- Did finding out about the lost or stolen keys result in proper mitigation by rekeying the affected part of the system?
- Did you receive key holders' keys when they left your institution?

These are just a few things we look for in the outcome of an audit. The wellness of a master key system depends on knowing where your keys are and who is using them.

What can be done to improve the ability to maintain the integrity of any master key system enterprise?

- Only issue the key to the key requestor, not to the key manager. Key managers change frequently, and you will lose track of keys issued.

- Put keys that have been issued as part of the separation checklist for people exiting your institution.
- Create fines for lost keys that have real-dollar values assessed to mitigate the corrupt part of your system; rekey affected areas.
- Give high-level keys to personnel on a limited basis, with written authorizations requiring a high level of authorization in your organization.
- Have frequent audits of keys held by the keyholder.
- Use an electronic key management system that provides an audit trail for a metal key.
- Use sealed key rings so keys cannot be shared.
- Serialize each key, appending it to keyholders' records.

Policies: They're Living Documents

As security professionals, we are called upon to develop policies. Do you view policies as a living document?

In another life, my wife and I owned and


Figure 1

Figure 2

Figures 1 and 2. To maintain the integrity of any master key system, use sealed key rings (Figure 1) rather than reusable locking key rings (Figure 2) so keys cannot be shared.

lived at a plant nursery; this was one of those out-of-control hobbies kind of thing. We sold landscape and exotic plants like Bromeliads. I had no idea how much care these plants required. Policies, like plants, need continual care to keep them in shape. Our policy needs are ever changing. This pertains to access to buildings, credentials and key control, to name a few areas. When was the last time you revised your policies?

Benchmarking using other institutions' key policies and key issuance is a great way to get some idea of where you are and where you need to be. In higher ed, everything is benchmarked; there are companies such as Sightlines that make a living doing benchmarking. Take some time this week to evaluate your living documents. Pull some weeds and do some fertilizing; keep those policies vibrant and healthy.

Establish Standards for Hardware Through Guidelines

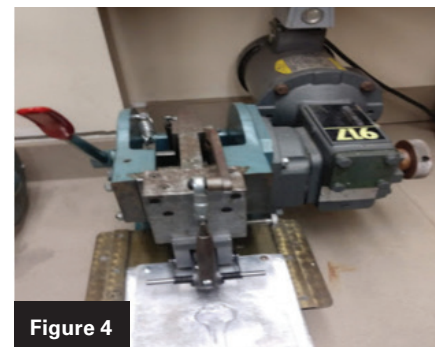
Establishing hardware guidelines is paramount. Without guidelines, an institution will have a mixture of brands. This causes an amazing amount of frustration for everyone involved. The frustration will start with the bidding

processes. It's important that contractors provide numbers for the same items across the board, apples to apples. That is why the review process is so important. If you can get the processes started in the right direction from the beginning, you can save a lot of problems down the road. This is especially helpful in the case of renovation projects. New hardware can be purchased and installed, keeping all the hardware compatible. There are currently more renovations and purchases of existing buildings than new buildings being built.

Adhering to the Guidelines Will:

- Keep things fair during the bidding process.
- Provide continuity with brands, grades, finishes, replacement parts and keyways.
- Standardize hardware maintenance, requiring fewer parts to do repairs.

This world is full of things that are disrespected, like speed limits and the Chicago Cubs. I firmly believe if we security professionals pay more attention to the fundamentals of key audits, policies and hardware guidelines, we will gain


Figure 3

Figure 4

Figures 3 and 4. Serialize each key (Figure 3) with a serializing machine (Figure 4), appending it to keyholders' records.

back the needed respect that helps us do our work daily. Respect must be earned, and it can be earned if we are diligent holding folks accountable.

Finally, we need the support from our administration to put teeth into policies and procedures, including real consequences for noncompliance. Without support, we are wasting time, money and energy and putting life and assets at risk. ☹



Steve B. Fryman, CRL, CAI, CISM, has worked in the physical security field for more than 40 years. Now working as the key shop manager at Florida

State University, he previously served as an institutional locksmith at the University of Florida and in the private sector with his own locksmith business. He developed the first curriculum and testing for the Certified Institutional Shop Manager designation, making him the first recipient of this credential.



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How to Develop and Use a Budget

Building a budget can be daunting, but starting with this template can help. **By Noel Flynn**

THIS IS THE EIGHTH ARTICLE IN THE “TOOLS FOR MANAGING YOUR Business” series. Although the importance of having a budget has been discussed previously, in this how-to article, we’ll actually construct a budget and explain and illustrate the steps along the way. Then, we’ll cover how to use your budget effectively as a management tool.

Why You Need a Budget

As mentioned in some previous articles in this series, perhaps the most important reason to develop a budget is that going through the process causes us to take a closer look at what’s happening in our businesses. Then, using the information developed about the current year (and past years), we can identify trends and data that will help to create a budget in support of our plan for next year. Yes, you should have a plan for next year. *Your budget supports your plan.*

The second primary benefit of developing a budget is that, having expressed our expectations (that’s what a budget really is: your expectations, expressed numerically),

we can then use those budget numbers in the coming year to track how we are actually doing relative to how we expected to be doing. This enables us to focus our attention upon those areas that are not behaving as anticipated, which is otherwise known as “management by exception.” This can become our early warning radar system to alert us of performance deficiencies or that we are exceeding expectations.

Different Kinds of Budgets

There are many kinds of budgets within our personal and business lives. These include cash flow, operating, company, division, subsidiary, departmental, project, family (this is the one that most of us are familiar with), vacation (you know, the one we always overspend) and more. Our focus will be on the company operating budget.

What Are We Trying to Accomplish?

Let’s stipulate that a budget will ultimately turn out to be somewhat inaccurate because we don’t have a crystal ball. We hope to plan our year so we can anticipate

our need for resources and how to efficiently allocate them. In so doing, we will minimize surprises that could have been foreseen. Although our budget won't be entirely accurate (if your budgets and forecasts are, stop reading and immediately invest all of your money in the stock market), we usually get better at it with more experience and as we accumulate more historical data. Of course, some events are entirely beyond our control and just cannot reasonably be anticipated.

Why Bother?

So if we admit that our budget will ultimately be inaccurate, why bother investing the time and effort in developing one? Do we stop engaging in weather forecasting just because our forecast is not always accurate? Does a military battle plan always (if ever) unfold as expected? The process of developing a budget *will* be worthwhile, and using it as a management tool will definitely pay off. We can at least manage those aspects of our business that we control or influence, and a budget is a powerful management tool that will help us to do just that.

Budget Variances

We call departures from our expectations “budget variances,” and they are either favorable or unfavorable. So if actual sales are greater than our budget, this good news is called a favorable variance. Conversely, if one of our expense categories is exceeding budget, this is bad news and therefore an unfavorable variance. Some people prefer the terms positive and negative variances, but this can become confusing — especially when numbers have negative signs. Unfavorable variances are sometimes presented in brackets and possibly highlighted in a red-color font.

Time to Dig In

This article is primarily intended to serve as a guide for those who are new to budgeting or looking for a structured approach. For simplification, we'll use small numbers that will likely not even remotely resemble your business. *Don't rush or get intimidated by all of this.* Just digest one step of this process at a time. It is highly recommended that you photocopy or print out *Figure 1* as a handy reference (ideally on one page) to have when you walk through each narrative step of compiling your annual numbers. After you have completed your own version of *Figure 1* using your actual data, we'll break down those annual numbers you generated. In *Figure 2*, we'll spread them among each month of that year to end up with monthly numbers.

At the end of the day, you are trying to do three things with your budget:

1. Generate your version of the *Figure 1* template, using your own historical income statement data, categories, lines and format.
2. Develop your own version(s) of *Figure 2*, which takes the annual (12-month years) numbers developed in *Figure 1* and then spreads them over a 12-month period into monthly buckets. This provides the numbers for each month so you can track your actual performance monthly compared to your budget expectations.
3. Generate budget variance reports (use spreadsheets or, ideally, the budget features of your accounting software) to help identify issues or concerns early and, if warranted, react to significant performance budget variances or deviations.

For those who prefer to use the actual spreadsheet model templates for *Figures 1* and *2*, we are providing access to the full actual Excel spreadsheet models. You can find them linked via this sentence in the version of this article in the General Locksmithing category of the ALOA Tech Link app or in the February digital edition of *Keynotes*.

ALOA members can access the Tech Link app by going to ALOAtechLink.com. Your user name is your email address registered with ALOA, and your password is your member number. For assistance, please contact membership@aloea.org or editor@aloea.org.

You can elect to simply view the spreadsheets, or you can copy the spreadsheet model file and modify the worksheets (tabs) for your own use, which will hopefully save you time and effort. **Caution:** Since none of the spreadsheet cells are protected, if you elect to use the actual models, be careful to avoid unintentionally erasing or writing over cells that contain formulas.

Cells that contain blue-colored data are intended to be replaced by your actual data, whereas cells that are in traditional black font usually contain either formulas or text that are generally not expected to be changed, except as you require. As a precaution, you may want to copy the original spreadsheet file and work with the copy. Or, you could add more worksheet tabs to the original worksheet file.

One Easy Way to Develop an Operating Budget

For our purpose, we will use a relatively simple method of developing our operating budget. This will be especially useful for those who have never been through a budget development process and perhaps view this task as somewhat intimidating. Now let's look at the primary steps.

	ANNUAL YEAR-END NUMBERS - FROM INCOME STATEMENTS									
	ANNUAL YEAR-END NUMBERS							PERCENT OF TOTAL - ALL SALES		
A	B	C	D	E	F	G	H	I	J	K
Category	2017 - Year End	2018 - Year End	2019-YTD Oct. (10 months)	Projected 2019 Year End	Budget 2020	2020 Budget, as a % of 2019 Projected Year End	Base Year 2017	2018 Year End	Projected 2019 Year End	Budget 2020
INCOME:										
Product Sales	110,000	120,000	100,000	140,000	154,000	110.00%	41.35%	40.00%	39.77%	38.23%
Service/Install. Sales	140,000	160,000	133,333	190,000	224,200	118.00%	52.63%	53.33%	53.98%	55.65%
Service Charges	10,000	12,000	10,000	13,000	14,950	115.00%	3.76%	4.00%	3.69%	3.71%
Other Sales	6,000	8,000	6,667	9,000	9,720	108.00%	2.26%	2.67%	2.56%	2.41%
Total - All Sales	266,000	300,000	250,000	352,000	402,870	14.45%	100.00%	100.00%	100.00%	100.00%
COST OF SALES (COS):										
Product Sales	70,000	75,000	62,500	85,000	95,000	118.00%	26.32%	25.00%	24.15%	23.58%
Service/other	85,000	90,000	75,000	120,000	130,000	108.00%	31.95%	30.00%	34.09%	32.27%
COS -All Sales	155,000	165,000	137,500	205,000	225,000	9.76%	58.27%	55.00%	58.24%	55.85%
GROSS MARGIN:	111,000	135,000	112,500	147,000	177,870	30,870	41.73%	45.00%	41.76%	44.15%
GM %	41.73%	45.00%	45.00%	41.76%	44.15%	2.39%				
EXPENSES:										
Rent	22,000	24,000	20,000	26,000	28,000	110.00%	8.27%	8.00%	7.39%	6.95%
Utilities	3,400	3,600	3,000	3,800	4,000	106.00%	1.28%	1.20%	1.08%	0.99%
Phone	3,200	3,400	2,833	3,500	3,800	108.50%	1.20%	1.13%	0.99%	0.94%
Internet	3,800	4,000	3,333	4,200	4,400	104.75%	1.43%	1.33%	1.19%	1.09%
Marketing	6,700	7,000	5,800	7,500	10,000	133.00%	2.52%	2.33%	2.13%	2.48%
Wages	43,000	45,000	37,500	48,000	70,000	145.80%	16.17%	15.00%	13.64%	17.38%
Payroll taxes	3,440	3,600	3,000	3,840	5,600	145.80%	1.29%	1.20%	1.09%	1.39%
Benefits	3,200	3,500	2,917	3,800	4,000	105.25%	1.20%	1.17%	1.08%	0.99%
Insurance	3,800	4,000	3,333	4,100	4,300	105.00%	1.43%	1.33%	1.16%	1.07%
Vehicle expenses	19,000	20,000	16,687	21,000	26,000	123.75%	7.14%	6.67%	5.97%	6.45%
Depreciation	2,500	3,000	2,500	3,000	3,200	106.50%	0.94%	1.00%	0.85%	0.79%
Other	350	500	417	500	600	120.00%	0.13%	0.17%	0.14%	0.15%
Total-all Expenses	114,390	121,600	101,320	129,240	163,900	26.82%	43.00%	40.53%	36.72%	40.68%
Net Income	-3,390	13,400	11,180	17,760	13,970	(3,790)	-1.27%	4.47%	5.05%	3.47%
Net Income %	-1.27%	4.47%	4.47%	5.05%	3.47%	-1.58%				

Figure 1. Create your own version of this spreadsheet using your own numbers and income statement categories.

We're going to mine data found in our income statements. No guesswork here; just use numbers from your financial statements. A spreadsheet is the best tool for developing your budget because you can easily play with the numbers. Most accounting software applications include budget features that can help and even facilitate electronically migrating (exporting) any historical data into your spreadsheet model. If you don't know how to use a spreadsheet, you can do it manually but, obviously, this approach will be far more labor intensive and primitive by today's norms.

Hint: Find someone to help you with the spreadsheet part and consider using the spreadsheet model templates accessible via the directions provided at the beginning of this article. Go ahead now and take a peek at *Figure 1* to create an image of where we are going. You will be creating your own version of *Figure 1* using your numbers and income statement categories. Next, we'll look at some mechanical steps that are illustrated in *Figure 1*.

1. First, take your most recent monthly income statement (P&L) and record in a column the year-to-date (YTD) numbers for each category of income and expense. Use the same vertical format as your income statements. Typically, companies use their September or October monthly income statements from the current year. We'll use October, which includes the first 10 months YTD of our 2019 12-month current year. If your company is not on a calendar fiscal year, use your most recent 10 months of the current fiscal year (see *Figure 1*, column D).
2. Since you only have 10 months of data at end of October, the second step is to "project" or forecast the remaining two months of the year so that we can have numbers for an entire 12-month year. Ten months of data will be *actual* from your October YTD income statement, whereas data for the last two months (Nov. and Dec.) of 2019 will be projected or forecasted. Some prefer to use the "SWAG" forecasting method (this term was coined during the Vietnam war). You know, the Scientific Wild Ass Guess method, but we can usually do much better than that.

So, bite the bullet and determine your best-estimate projection for the remaining two months of 2019 (November and December). Then add these to the YTD numbers for the first 10 months, January through October. Congratulations: You now have a projected 2019 year-end set of (12 months) numbers for each income statement category. You should now have one column for the YTD October numbers (10 months; *Figure 1*, Column D) and a second column for your full projected year-end that represents 12 months for 2019 (*Figure 1*, Column E).
3. Using your 2019 projected year-end numbers, think about what is expected or likely to change (up or down and by how much) for 2020 for each income statement category. What is your plan for 2020, and how will it impact your numbers? Usually, your income or sales section is the most important, so you should spend most of your time on this part. Any new products or services? Any expansion of territory? Use the top-down method (assign percentage of change), then do a bottom-up and identify where the growth will actually come from. If you expect 8% sales growth, how much will come from price increases? How much from product sales? Installation or repair sales, etc.?

Reconcile your top-down and bottom-up sets of numbers. Do a sanity check. No... on your numbers, not on your mental state. There can be a fine line between "certified" and "certifiable!"

For each category, ask yourself these questions about your 2020 business activity:
 - Will my projected 2019 year-end numbers go up, down or remain essentially flat in 2020? Do this line by line.
 - By how much?
 - Why?
4. Now, create one more column and post those 2020 budget numbers alongside of your projected 2019 year-end numbers (*Figure 1*, Column F)*. Review the side-by-side comparison (*Figure 1*, Columns D, E and F) and remember that Column D only represents 10 months. Here again, the spreadsheet tool makes it so much easier to play "what if" and not waste your time fooling with the math. You may not like computers (probably a mutual feeling), but they are far better and faster at crunching numbers than you are. It's more important that you invest most of your time thinking about your plan and its potential and likely impact on your numbers for next year.

*In our *Figure 1* model, note that Column G in the actual model contains a blue percentage number, meaning that your input is required. Instead of calculating your 2020 budget numbers manually, Column G contains formulas that will calculate your budget numbers for Column F using your projected 2019 year-end numbers. So once you have your 2019 projected year-end numbers in Column E, you can input your expected percentage into Column G, and the formulas will populate your 2020 budget result.

You can change the percentages as many times as you wish until you are satisfied. We tend to think in percentage increases, so the idea here is to just enter the percentage that your 2020 budget will represent, compared to your projected 2019 number. It could be 102%, 105%, 98%... or you can just manually enter your budget numbers into Column F.

For illustration purposes, let's say your projected 2019 year-end number for insurance is 4,100, same as in *Figure 1*, Column E. Instead of manually calculating your guess-estimated insurance expense number for your 2020 budget, you can just input your percentage (in Column G) of your 2019 year-end. Let's use 105.00%, as in the model in Column G. So if you enter 105% in Column G (cell G30) for insurance, the formula places 4,300 in Column F. This says that your 2020 budget for insurance is expected to represent 105% of your projected 2019 year-end number. In other words, you are expecting your 2019 insurance

expense to increase by 5% for 2020. Alternatively, you can overwrite the formula and just enter your budget numbers directly into Column F.

Fixed Versus Variable Expenses

Keep in mind that most of your expenses tend to be either "fixed" or "variable." In other words, as your sales increase or decrease, some of your expenses will remain relatively flat (such as insurance), whereas other expenses will be more variable and therefore tend to change more, largely as a result of the change in sales. Are you expecting to take any price increases or receive any significant cost increases? Although some expenses are *semi-variable*, most small companies avoid this level of detail.

Calculate the Percentage of Total Sales for Each P&L Category

Although not essential, you will also find it enormously helpful and informative to add percentage columns to calculate each

	Monthly Numbers (from Income Statements)												
Figure 2a					YEAR	2017							
	ACTUAL MONTHLY NUMBERS - FROM INCOME STATEMENTS												
Category	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total Year
INCOME:													
Product Sales	9,163	9,163	9,163	9,163	9,207	9,163	9,163	9,163	9,163	9,163	9,163	9,163	110,000
Service/Install/Sales	11,662	11,662	11,662	11,662	11,718	11,662	11,662	11,662	11,662	11,662	11,662	11,662	140,000
Service Charges	833	833	833	833	837	833	833	833	833	833	833	833	10,000
Other Sales	500	500	500	500	502	500	500	500	500	500	500	500	6,000
Total - All Sales	22,158	22,158	22,158	22,158	22,264	22,158	22,158	22,158	22,158	22,158	22,158	22,158	266,000

	Monthly Numbers, As a Percentage of Annual Numbers												
Figure 2b					YEAR	2017							
	EACH MONTH, AS A PERCENT OF THE TOTAL YEAR												
Category	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total Year
INCOME:													
Product Sales	8.33%	8.33%	8.33%	8.33%	8.37%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	100.00%
Service/Install/Sales	8.33%	8.33%	8.33%	8.33%	8.37%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	100.00%
Service Charges	8.33%	8.33%	8.33%	8.33%	8.37%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	100.00%
Other Sales	8.33%	8.33%	8.33%	8.33%	8.37%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	100.00%
Total - All Sales	8.33%	8.33%	8.33%	8.33%	8.37%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	8.33%	100.00%

Figures 2a and 2b. Only the income lines of our 2017 income statement are displayed in Figure 2a, and the corresponding monthly percentages are displayed in Figure 2b.

category as a percent of total sales. You can test your formulas by looking at the percentages for total sales, and they should say 100%. Every other category will usually represent some part of 100%. In other words, the product sales category number might be 50-60% of your total sales number, whereas your utilities expense might be only 1.5% of your total sales number (*Figure 1*, Columns H through K).

This side-by-side comparison identifies the relationship between various line items to your total sales number. It also facilitates identification of large year-over-year changes that may or may not be of concern. If you add additional columns of data from prior years (let's say 2018 and 2017 - *Figure 1*, Columns B and C, as we did in the model), you will be able to more easily spot trends. So, now you can review an array of four years' worth of numbers for each income statement category (*Figure 1*, Columns B, C, E and F — yes, we omitted Column D because it represents only a partial year of 10 months) and also the percentages of total sales represented by each. See the four-year array in *Figure 1*, Columns H through K. Obviously, if your business is new, you won't have the historical data from prior years to guide you, but you will later on.

Spreading Annual Numbers Among the 12 Months of the Year

Once we have established our annual numbers for each year in *Figure 1*, we need to spread or allocate those annual numbers among each of the months in that year, as illustrated in *Figures 2a* and *2b*. This is known as "seasonality" and is often associated with such retail categories as lawn and garden or pool/swimming supplies and trim-a-tree. Your business likely has some peaks and valleys, so sales volume for some months is more robust than for others. December is often slower.

Because of space limitations, we are unable to present an array of monthly numbers for each of our income statement categories for each of our four years. *Figure 2a* is an abbreviated look where only the income lines of our 2017 income statement are displayed, but the principle is the same for other income statement categories. Immediately following *Figure 2a*, you will also see the corresponding monthly percentages displayed in *Figure 2b*.

You can view the digital edition of the magazine or the ALOA Tech Link app to see and use the entire model with all four years. However, if you do so and go directly into the various *Figures 2a* and *2b* numbers in the spreadsheet model, you will see that on the left side, we have *Figure 2a*, which spreads the 2017 year-end numbers into 12 months of that year. These monthly numbers come directly from your 2017 monthly historical income

statements. On the right side is the corresponding *Figure 2b*, where our formulas calculate the distribution percentages for each category, for each month. Remember, these model numbers and percentages are bogus and *should be replaced by your actual numbers*. If you insert your actual 2017 monthly numbers into the spreadsheet model, the formulas will calculate the annual totals, and on the right side of the model, formulas will also calculate the monthly percentages for you.

If you use the actual spreadsheet model, you will see in *Figures 2a* and *2b* that below the 2017 annual numbers, the same template is presented for 2018, 2019 projected and 2020 budget years.

Review Monthly Numbers (But Pay Even More Attention to Quarterly Data)

Keep in mind that once you capture data from past years, you won't need to do that again for those same years. Although your monthly seasonality for each year will be different (especially where you have large projects), this historical data can be very informative. **Hint:** Capture the monthly numbers, but pay more attention to your quarterly numbers, since the somewhat erratic patterns of our monthly numbers tend to smooth out by the end of each quarter. Our model does not calculate quarterly numbers, but this can easily be done once you have the monthly numbers captured.

Recapping the Primary Steps

1. Set up your model or use the one provided digitally, modified to match your income statements.
2. Create a column of actual income statement YTD data for the first 10 months of the current year.
3. Create a second column and estimate where you are likely to end this year (2019 projected year-end).
4. Create a third column and generate your budget numbers for 2020. Revise as necessary.
5. Create additional columns and add actual annual income statement data from recent prior years.
6. Calculate the percentage of each line item, relative to total sales.
7. Capture the historic seasonality patterns of your business. Calculate the monthly percentages for each line item of your income statements.

Next, let's move on to look at how you can use your new budget to help you manage your business.

Using Your Budget as a Management Tool

If you have used a spreadsheet or some other tool to develop your budget, you will need to upload (import) that data into the



XYZ Company - Budget Variance Report								
		Month of October 2019			October Year-to-Date 2019			
Category	Actual	Budget	Variance	Var. %	Actual	Budget	Variance	Var. %
Rent	2,000	2,000	0	0%	20,000	20,000	0	0%
Utilities	300	280	(20)	7%	3,000	2,800	(200)	7%
Phone	283	300	17	6%	2,833	3,000	167	6%
Internet	333	310	(23)	7%	3,333	3,100	(233)	8%
Total Expenses	2,916	2,890	(26)	0.009%	29,166	28,900	(266)	0.009%

Figure 3. It's important to review year-to-date budget variances.

appropriate section of your accounting software application. This will ensure that, going into the following year (the budget year; 2020 in our situation), the accounting software will be able to generate budget variance reports. If you don't have accounting software, you can use your spreadsheet model data and add a budget variance feature.

Budget variances are the difference between what we expected (the budget numbers) and our actual numbers. There are usually standard budget variance reports available from typical modern accounting software. We'll use bogus expense numbers for just a few categories to illustrate this technique. A customary format would look like *Figure 3*.

Interpreting Your Budget Variances

As the year unfolds, pay more attention to the YTD numbers than each month's numbers. You'll also need to review numbers on a quarterly basis because monthly numbers can be erratic, and swings tend to settle down by the end of each quarter. A quick scan of the variances will reveal where you need to take a closer look. No need to study those categories that are performing as expected. It is recommended that you look at your YTD variance percentages first and then your variance dollars. If you get off to a bad start with softer sales volume, start looking at how you can increase sales and reduce expenses. **Caution:** Code expenses to the appropriate general ledger categories

rather than placing them somewhere else just to make the budget accuracy (variances) look better.

Conclusion

So, now you are ready to go ahead and build your own budget. Read this article a few times. Use the spreadsheet model templates and modify them to meet your needs. Or, use the principles discussed to construct your own. Then load the budget numbers into your accounting software, and you are ready for next year. Next year, generate monthly budget variance reports from your accounting software application and use them to manage by exception. If it ain't broke, don't fix it.

The next article will be "A Business Blueprint: Connecting the Dots," where we will discuss how the various topics covered in previous articles come together for success. ☺



Noel Flynn is a degreed business management consultant with global senior leadership experience, including more than 20 years in manufacturing, wholesale distribution and consulting sectors of the security industry. Noel has been a senior executive, officer, board director and advisor to not-for-profit and for-profit companies in numerous industries worldwide. This includes being an ALOA board member since 2011, and he is also an ACE instructor, developing and teaching business management.

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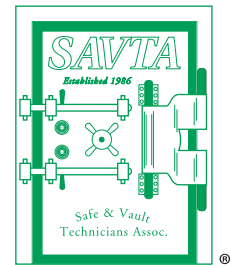
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Educating Your Customers About Network-Connected Safe Locks

Clearly define your customers' needs to provide better solutions. **By Travis Ferry**

THE TECHNOLOGICAL ADVANCEMENTS THAT ARE TAKING PLACE WITH cellphones, laptops and tablets are evolving in the same manner and speed as security and locking devices. Locksmiths can benefit from being well versed and current about new solutions and the variety of options available to them.

For safes, older mechanical combination locks are not conducive to today's present requirements and situations. Those traditional locks, whose origins date back to almost 4,000 B.C., are tedious, take substantial time to open and are only accessible with a specific key. While these locks will probably be used for years to come, the functionality that electronic access control can provide is a leading benefit for connected devices. Therefore, the decision to switch over to a network-connected safe lock is usually based on convenience.

Businesses of every size require a reliable way to ensure that valuable items are protected, and they rely on locksmiths for guidance and recommendations. When helping a customer determine the relevant products for their needs, and with technology leaning toward a network-connected safe lock, start by understanding and determining what is to be secured and what would be the best lock to fit that scenario.

Being well informed on the various products available will help your customers — and you — make the best decision on which lock is right for them.

Network-Connected Safe Locks

First, to comprehend the value of network-connected locks, it's important to understand how they work. The internet of things (IoT), which is universally referenced on a regular basis, indicates the ever-growing network of physical objects. The most important aspect of these locks is communication and how the devices interact with each other. For example, an Internet Protocol (IP) address is a communication method that allows everyday devices to send data across the network to each other. Most significant for safe locks are applications that allow for increased convenience and a more secure solution to electronic access control.

One of the most beneficial features is the remote monitoring capabilities that

are present with an IP safe lock. These capabilities include establishing different levels of access, managing user codes, granting access either permanently or temporarily, setting schedules, performing audits, enabling and disabling locks, and receiving real-time alerts and exception reporting through a user-friendly software interface.

In addition to the remote monitoring capabilities, other features assist with day-to-day use as well. The easy-to-use flexible design permits easily downloadable audit trails where managers can identify who accessed the safe and at what time. Advanced security features of some locks include a penalty lockout due to random code entry attempts and a time delay in the event too many codes are entered.

Educate Your Customers and Define Needs

The first questions to ask are: How many safe locks are needed, and how many individuals will have access to those locks? Once you have this basic information, you can begin establishing a budget. Some customers may want their locks to be centrally controlled, while others want

each lock to stand on its own. Obtaining the basic information upfront will allow you to begin developing a plan for the best safe lock solution.

Budget concerns are always top-of-mind for customers. They will want to know the initial cost as well as the ongoing maintenance costs that apply to each solution being considered. This may include additional cost factors attributed to system failure, power supply and any additional components your customer may need for the duration of use.

Establish Compatibility

Users want assurance potentially inoperable locks during a power loss or internet blackout, for example. Some IP locks are powered externally and also have a battery backup. In the case of a lost internet signal, it's important to know if all data and communication will continue to be stored until connectivity is available again. These features allow users the convenience of not having to constantly check if data is being stored or if the lock is going to lose power.

There are also some locks that use existing Wi-Fi systems, so there is no need for peripheral components or drilling. This allows for a more streamlined installation process and results in reduced costs. These locks are integrated with more technical information, so they can be easier to operate and used for one lock or multi-lock locations.

Evaluate Connection Security

The wireless network to which your safe lock connects needs to be strong. Some customers might be hesitant to link important documents and communications to the internet. And, because data between these devices are transferred over a network, additional security measures are required. Check to see what encryp-

Figure 1. One of the most beneficial features of network-connected safe locks is the remote monitoring capabilities.

tion methods are used within the lock in addition to the firewall and other security features that are present through the wireless internet service provider. Keep in mind that there are so many security approaches — hardware, software, etc. — that can prevent malware or other malicious attacks on the lock daily.

Recap and Evaluate

As stated, technology changes quickly and often. No matter what network-connected safe lock your customer ultimately chooses, if the lock changes in any way or if there are upgrades available, relay that information to them. It is important to keep the communication with your customers open and honest. Continue to provide them with the most updated information, which can include any additional considerations that need to be discussed post-installation.

Targetable Industries

Network-connected locks can be used for a variety of industries and are most beneficial for retail and other commercial facilities. Specifically retail businesses, for example, that schedule different managers throughout a day who all need access to

the same location. They can be permitted access, control multiple levels of oversight and enable and disable the lock, all of which can be done from a remote location. Some locks allow users to assign multiple independent schedules per day for multiple users; meaning if Tom, Joe, Liz and Amy are the four managers, they each can have his or her own schedule and codes to get into the lock during their shifts.

Although mechanical safe locks will continue to be used, the functionality that electronic access control can provide is a leading benefit for connected devices. The technology is already being used throughout the world, and — no matter how much access control technology continues to change — having the ability to lock doors, safes and vaults to protect property will always be a need. 🌀



Travis Ferry is an electrical design engineer who has been a proud employee of Sargent and Greenleaf for over 22 years. Travis has worked directly with all of S&G's electronic products, with focus on the A-Series ATM access control locks and Digital Platform product lines.





Creating a Fulfilling Retirement

Retirement isn't the end but rather just the beginning. **By Claire L. Cohen**

AFTER 50 YEARS OF WORKING AND SEVERAL CAREER CHANGES (including 13 years in the locksmith business), I retired about two years ago. It has been a new learning experience for me. I wanted to remain active, both physically and mentally. I learned that some of the skills/experiences I had in my working life would translate into benefits in retirement in somewhat different ways.

A Look at "Retirement"

Retirement is a relatively new concept that has evolved as life expectancy has increased. According to my dictionary, retirement is the "withdrawal from one's position or occupation from active working life."

It is projected in the next decade that one in five U.S. adults will be 65 or older, and life expectancy at birth will have risen to 83. For some, there is no choice but to leave the labor force for health reasons, workplace downsizing, etc. For others, giving up working may not be an option due to financial need. For some, the time to retire may be a choice. Some opt to continue working past "traditional" retirement age, even without financial need, as they enjoy their work.

A person may also semi-retire by reducing work hours. An increasing



number of individuals are choosing to put off total retirement by engaging in “pre-retirement.” Those who continue working in some capacity may find that it gives them a sense of accomplishment.

Conceptually, retirement is the time to relax and enjoy the fruits of years of hard work. It may mean individual freedom from the stress and constraints of employment. However, while leisure time may appeal to some, for others, the absence of routine and demand creates a lack of purpose, provides no measure of accomplishment and cultivates a sense of apprehension, anxiety and fear. Often the “what next?” principle kicks in, and the way a person deals with their newly acquired free time may mean the difference between enjoying years of gratifying, fulfilling retirement dreams or enduring a life of solitude, depression and regret.

Some people may “coast” into retirement and adjust quite rapidly. Others may take years to fully stride into retirement life.

Make Space for Your New Life

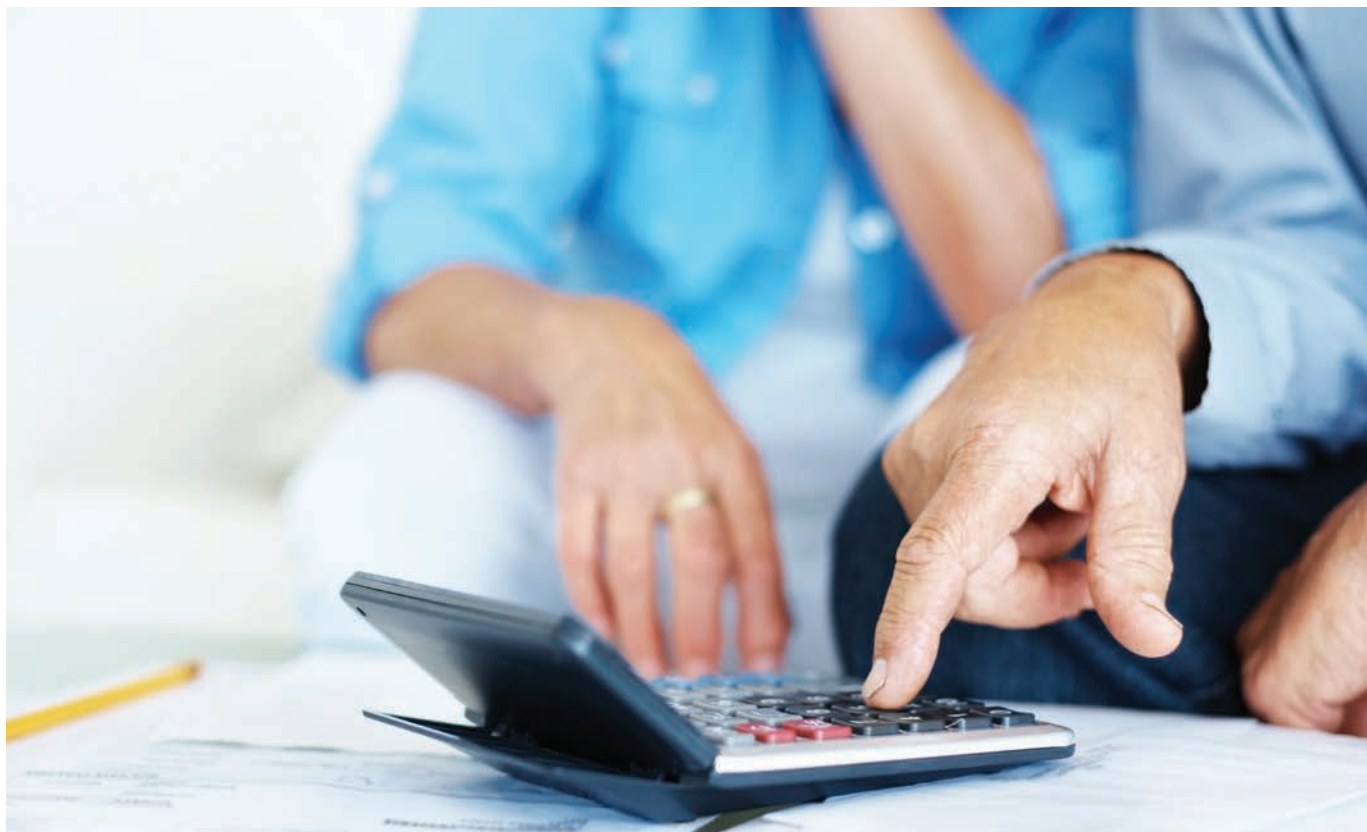
Recognizing that there may be items you no longer need is part of the process. What is lingering in your house,

storage facility, etc.? Are there old business cards (of companies that went out of business years ago), old service tickets, rusty or outdated parts and equipment that have accumulated over the years? Creating time to purge may be part of the retirement process. Are there items that you will never use again — *really*? There may be items you no longer need that a fellow locksmith could use. Perhaps one of the local associations can help you identify an apprentice or existing business that could use your tools.

“Look at the skills you have accumulated over a lifetime. Can you share your accumulated skills with others (perhaps an apprentice) or teach an association class?”

The Pursuit of Happiness

One of the most common complaints from retirees is boredom. To be truly happy and healthy in retirement, your life should contain a mix of activities that provide physical activity, mental stimulation, socialization and fulfillment. The fulfillment may come from realizing lifelong dreams, satisfying your sense of purpose or helping others. Maybe some activities just make you happy in the moment. An active retirement is not just keeping busy but taking part in engaging, quality activities that make your life worthwhile. The challenge is in finding



something(s) you are passionate about.

In a different way, can you harness some of your past skills or interests to help others? Look at the skills you have accumulated over a lifetime. Can you share your accumulated skills with others (perhaps an apprentice) or teach an association class?

Explore some possibilities. Some ideas that may interest retirees include taking a class, participation in sports, travel, volunteer work, taking up a new hobby, working part-time in a completely different industry... and the list goes on.

The idea of learning something new every day is priceless in the pursuit of individual fulfillment. Like the body, the brain must be fed with a nutritious diet to remain fully functional. Retiring from employment does not mean retiring the body or the brain from activity. The critical objective is to challenge and work the brain. The return on the men-

tal investment will not only enhance the mind but also improve the body and restore the soul!

The demands of a career often lead to disassociation with friends and family. Retirement offers the time to make amends for the years of absence from the lives of people you care about. Plan to reunite with old friends and cherished family members. Social connections and friendships are shown to increase a person's longevity and well-being. Keeping in touch with the industry at association meetings, by reading trade publications or attending ALOA conventions (or helping teach a class) are ways of staying connected with your industry.

Final Thoughts

In the end, retirement is what you make of it. It may take some planning and perhaps some sacrifices and soul searching. It is finding the right mix of what works

for you! It is harnessing some of the skills you have amassed over your lifetime to use in different ways. What works for you might be very different than what works for someone else.

One of my biggest surprises is that my week looks so little how I envisioned it while I was working. My greatest pleasure is the flexibility of schedule that I have. *Retirement is not the end of productivity; it is a new beginning.* Now I wonder how I ever found time to work! ☺



Claire Cohen and her husband, Jerry, were early proponents of the Proficiency Registration Program. Both earned the status of CML. Claire con-

tributed the article "How to Study for the PRP," which is contained in the PRP Resource Guide. She was recognized as the *Keynotes* Author of the Year in 2001.

KABA® POWERPLEX 2000 SERIES *Part 7*

Sal Dulcamaro explains the programming process for user codes.

IN TWO PREVIOUS INSTALLMENTS IN THIS ARTICLE SERIES, I STARTED explaining programming of the PowerPlex lock (earlier articles covered installation and function programming of a privacy function PowerPlex lock). In the last article, I discussed reprogramming default settings and changing the master code, which is required for any other programming. This month, I'll cover setting user codes and related programming features.

The PowerPlex is programmed from the keypad (see *Figure 1*). Included with the lock are installation and programming manuals as well as a quick reference guide (*Figure 2*). The instructions that come with the PowerPlex are the same ones that apply to the E-Plex 2000 (as read on the pamphlet's cover). The primary difference is that the E-Plex uses batteries that must be replaced, while the PowerPlex has a built-in power generator that doesn't require batteries.

Some of the features vary, as certain clock functions require batteries to keep time and date information that is needed to lock and unlock the unit at scheduled times. However, I will only be dealing with features specific to the PowerPlex. The front page of the pamphlet mainly deals with the programming I dealt with in the previous article. The middle two pages (*Figure 3*) deal mostly with programming user codes, which I will explain now.



Figure 1. The PowerPlex is programmed from the keypad.

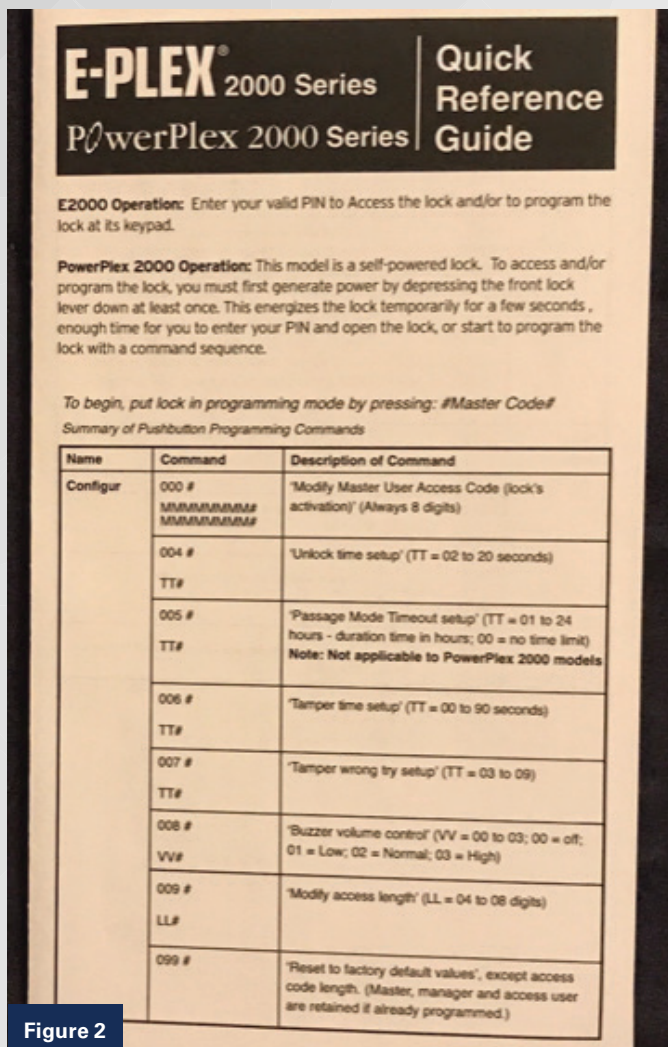


Figure 2

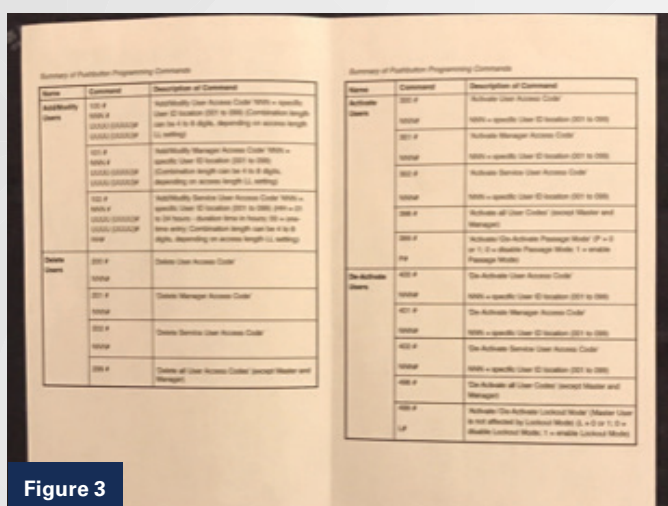


Figure 3

Figures 2 and 3. Included with the lock is a quick reference guide. The front page (Figure 2) mainly deals with the programming, and the two middle two pages (Figure 3) deal mostly with programming user codes.

We'll presume that the user code (which can be four to eight digits, with four digits being the default setting) and then the master code have already been changed, as discussed in the previous installment. I will use the same example master code as before: 99999999. You can set your master code to any eight digits you choose. Remember that once you change the master code from the factory default of 12345678, you cannot alter the length of user codes without doing a hard reset first. That will be explained later.

The # key always starts the programming process, followed by the master code and then the # key again. A three-digit command follows, which will designate the specific feature to be programmed, and then the rest of the programming digits.

At the hospital where I work, we have between 300 and 500 PowerPlex locks. We started using them a few years ago as a replacement for KABA 1000 and L1000 locks that were having reliability issues. At first, we tried to find an alternate mechanical grade 1 push-button lock so we wouldn't have to worry about changing batteries. Apparently, although there are quite a few grade 2 mechanical push-button locks, grade 1 versions were more scarce. I tried one product, but for whatever reason, we couldn't get it to accept our 7-pin Best cores.

The PowerPlex lock turned out to be quite a revelation. It's electronic, but the built-in generator powers up by operating the outside lever handle. We tested it on some high-use doors and decided it was what we were looking for. It does what a mechanical push-button lock can: operate continuously without batteries, but the electronics give it unmatched versatility. It can operate by multiple user codes and resist code guessing (unlike mechanical locks, which allow unlimited guessing until you discover the code). An electronic push-button lock can count wrong attempts and temporarily shut down the lock for security. We mostly used them as single-code locks, but I'll explain the more extensive potential capabilities.

Working With Manager Access Codes

In our hospital, we only program with the master code so individual people or departments can't program the locks and possibly cause problems or inconsistencies. Within the PowerPlex system, though, there are manager codes that you can set to allow considerable programming capabilities to lower-level people in an organization. There are limits, though, and certain programming can only be done with the master code.

Much of what I will explain about setting manager access codes will also apply to the E-Plex 2000 battery-operated locks, but some things will differ. Manager access codes can program

“Remember that once you change the master code from the factory default of 12345678, you cannot alter the length of user codes without doing a hard reset first.”

all lock functions except: defining the access user code length; modifying the master user access code; resetting to default values; activating lockout mode; and adding/deleting/enabling/disabling a manager user.

The number of managers is limited only by available user table space (99 maximum, because 000 is reserved for the master code). The total limit on all codes is 100, which includes the master code, manager codes, user access codes and temporary service user codes. It can be a variety of arrangements of the different types of codes, as long as the total doesn't exceed 100.

There are different levels of access. The master user can access everything. The manager user can do almost anything the master user can, with the exceptions listed earlier. A regular access user can only unlock the lock, and the service user (which will be explained later) has temporary access.

I will start with adding or modifying a manager access code. For simplicity, I will continue to use the eight-digit master code of 99999999. Start by putting the lock into the programming mode.

*Enter the master code: #99999999#
Enter programming mode: 101#
Enter the user ID location (a three-digit number you should keep on a list to track all programmed codes): 035#
Enter the chosen manager code: 3333#
Re-enter the new manager code: 3333#
Enter the # key again to end programming.
The full entry would be: #99999999#101#035#3333#3333##*

I also programmed two other manager codes. User ID location 050 was 5555, and user ID location 075 was 7777. Mine are only examples. You can choose your own ID location numbers and

manager codes. Manager, user and service access codes will have the same number of digits. If you don't change the user code length at the start of programming, it will remain as four digits. You can choose from four to eight digits, and the number of digits you select will apply to all your manager, user and service access codes.

Once you've programmed all of your manager codes, you can choose either the master or manager codes to program user or service access codes. I'll use the master code in my examples, but any programming not limited to the master code can be programmed using manager codes.

Adding/Modifying a User Access Code

You'll need to maintain records of which codes are in use and know which ones might be temporarily deactivated. You will have a three-digit number assigned to each code. You can program a code and later either deactivate it or delete it. You can also write over a code by programming using an existing three-digit number and programming a different code. Start by putting the lock into the programming mode.

*Enter the master code: #99999999#
Enter programming mode: 100#
Enter the user ID location: 002#
Enter the chosen user access code: 1234#
Re-enter the new user access code: 1234#
Enter the # key again to end programming.
The full entry would be: #99999999#100#002#1234#1234##*

This is just an example. You could have used any of the manager user codes to start the programming and any other three-digit identifier for the particular code. You also could choose whatever four-digit code you wanted, or more digits if the lock was set up that way. You can program as many different user codes as necessary until you reach the limit.

Adding/Modifying a Service User Access Code

Earlier, I mentioned service user access codes, which are designed primarily for temporary use. They can be programmed for one-time use or to be usable for a number of hours. These codes are probably best made in advance for anticipated future use. You can program service user codes in reserve and only hand them out when you need to give temporary access to a service technician or someone who normally would not have access to a building or room. Start by putting the lock into the programming mode.

Enter the master code: #99999999#
Enter programming mode: 102#
Enter the user ID location: 025#
Enter the chosen service user code: 2240#
Re-enter the new service user code: 2240#

Now, enter the number of hours you want the code to work (between 01 and 24 hours). If you choose 00, it will not count minutes or hours, but only one use. Once the code is entered one time, it will not work again. If you choose between 01 and 24 hours, you can use that code for that length of time. Let's select two hours.

Enter: 02#
Enter the # key again to end programming.
The full entry would be: #99999999#102#025#2240#2240#02##

Delete Manager Access Codes

Manager access codes can only be added, modified, deleted, activated and deactivated using the master code. If you intend to reuse a manager code in the future, you should deactivate rather than delete. Start by putting the lock into the programming mode.

Enter the master code: #99999999#
Enter programming mode: 201#
Enter the user ID location: 035#
The full entry would be: #99999999#201#035##

If you are deleting the code, you only have to identify the code location without having to list the actual four-digit code.

Deleting User Access Codes

User access codes can be deleted using either the master code or a manager code. As with deleting manager access codes, you only need the three-digit code location. Start by putting the lock into the programming mode.

Enter the master code: #99999999#
Enter programming mode: 200#
Enter the user ID location: 002#
Enter the # key again to end programming.
The full entry would be: #99999999#200#002##

Deleting Service Access Codes

You may want to keep a number of pre-selected service access codes for unexpected needs. But if you have too many, they are deleted very similarly. Start by putting the lock into the programming mode.

Enter the master code: #99999999#
Enter programming mode: 202#
Enter the user ID location: 025#
Enter the # key again to end programming.
The full entry would be: #99999999#202#025##

Delete All Access Codes (Except Master and Manager)

If you believe all the user codes have been stolen or compromised, you may consider deleting them all at once instead of one at a time. Remember, if you were wrong, it could be rather time-consuming to program all the codes back in. If you're in doubt, deactivating them might and then deleting if the bad news is confirmed might be wiser. To delete them all, start by putting the lock into the programming mode.

Enter the master code: #99999999#
Enter programming mode: 299# to delete all access and service codes
Enter the # key again to end programming
The full entry would be: #99999999#299##

Deactivate All Access Codes (Except Master and Manager)

Start by putting the lock into the programming mode.

Enter the master code: #99999999#
Enter programming mode: 498# to deactivate all access and service codes
Enter the # key again to end programming
The full entry would be: #99999999#498##

Deactivate Individual Manager Access Codes

Start by putting the lock into the programming mode.

Enter the master code: #99999999#
Enter programming mode: 401#
Enter the user ID location: 035#
The full entry would be: #99999999#401#035##

Deactivate Individual User Access Codes

Start by putting the lock into the programming mode.

Enter the master code: #99999999#
Enter programming mode: 400#
Enter the user ID location: 002#
The full entry would be: #99999999#400#002##

“You’ll need to maintain records of which codes are in use and know which ones might be temporarily deactivated.”

Deactivate Individual Service Access Codes

Start by putting the lock into the programming mode.

Enter the master code: #99999999#
Enter programming mode: 402#
Enter the user ID location: 025#
The full entry would be: #99999999#402#025##

Activate All User Access Codes

Start by putting the lock into the programming mode.

Enter the master code: #99999999#
Enter programming mode: 398# to activate all user access
Enter the # key again to end programming
The full entry would be: #99999999#398##

Activate Individual Manager Access Codes

Start by putting the lock into the programming mode.

Enter the master code: #99999999#
Enter programming mode: 301#
Enter the user ID location: 035#
The full entry would be: #99999999#301#035##

Activate Individual Service Access Codes

Start by putting the lock into the programming mode.

Enter the master code: #99999999#
Enter programming mode: 300#
Enter the user ID location: 002#
The full entry would be: #99999999#300#002##

Activate Individual Service Access Codes

Start by putting the lock into the programming mode.

Enter the master code: #99999999#
Enter programming mode: 302#
Enter the user ID location: 025#
The full entry would be: #99999999#302#025##

Activate/Deactivate Lockout Mode

There may be emergencies where you want to stop all access, such as a fire or some other dire circumstance. This can only be done with the master code. Start by putting the lock into the programming mode.

Enter the master code: #99999999#
Enter programming mode: 499# for lockout users mode
Enter 1# to activate lockout mode and 0# to disable it.
The full entry would be: #99999999#499#1## or
#99999999#499#0##

That covers most of the programming for a PowerPlex lock. The battery-operated E-Plex does a few things that the PowerPlex doesn't, but the passage mode is one final feature of the PowerPlex to cover.

Activate/Deactivate Passage Mode

If you don't want people to need a code to enter through a doorway, you can put the PowerPlex into passage mode. This can be done with either the master code or a manager access code. It goes as follows: Start by putting the lock into the programming mode.

Enter the master code: #99999999#
Enter programming mode: 399# to activate/deactivate passage mode
Enter the code, where 1 = activate passage mode and 0 = deactivate passage mode
The full entry would be: #99999999#399#1## or
#99999999#399#0##

In the next article in this series, I will cover troubleshooting and hard reset. ☺



Sal Dulcamaro started out in locksmithing in 1975 at age 17. He first practiced as a commercial locksmith before becoming an institutional locksmith in May 2014 for a large hospital. He has been a technical writer for more than 30 years, with more than 300 magazine articles published. He previously served as a contributing editor and a technical editor for *Reed's Security Reporter*.

CREATING PINNING CHARTS FOR SARGENT 6300 CORES **FAST**

Tyler J. Thomas, CJIL, CMKA, CRL, explains how to create charts for these LFICs in seconds.

NOTE: THIS ARTICLE IS NOT A PRIMER ON SARGENT 6300 CORES. THIS article will assume you have at least a cursory understanding of what Sargent 6300s are, their components, and the concepts behind their operation. If you are unfamiliar with Sargent 6300s, please read William M. Lynk's article on them in the April 2014 issue of Keynotes.

In my last article, I showed you how to create pinning charts for SFICs in seconds using a method that is not known by many. That method, believe it or not, can be applied to other interchangeable core formats with minor tweaks. In this article, I will apply that method to the Sargent 6300, which is Sargent's large format interchangeable core.

As was the case with SFICs, traditional methods of creating a pinning chart for the Sargent 6300 require an unnecessarily robust formula for calculating the build-up pin. This formula, like for SFICs, requires three separate calculations:

1. Add your bottom and, if applicable, master pin(s) to create a plug total.
2. Add 8 to your control key cut to create a "control number."
3. Subtract the plug total from your control number to derive your build-up pin.

The Method

I'll discuss the method while providing an example. *Figure 1* shows a basic Sargent 6300 pinning chart. As a quick reminder, Sargent 6300s only use a control lug in the third and fourth chambers, which is why the build-up pin boxes are blacked out in the

other, non-control chambers. I have these pinning charts available for free at Lock-Reference.com. Print as many as you'd like to keep on hand. We'll use one of these charts to demonstrate the method. *Figure 2* shows the bittings we'll be working with to construct a pinning chart.

Step 1: Determine Bottom and Master Pins (If Applicable)

Step 1 uses the same rules as rekeying conventional cylinders. If the core is not master keyed, then your bottom pins will mirror the change key's bittings. If the core is master keyed, then each bottom pin is determined by the shallowest operating cut in that chamber, and the master pin is determined by the deepest cut minus the shallowest operating cut for that same chamber. Because our core

is master keyed, we'll use conventional master keying rules to determine our bottom and master pins. *Figure 3* shows us our results thus far.

Step 2: Determine Top Pins

Like SFICs, Sargent 6300s use uniform stack heights for each chamber. Unlike SFICs, those uniform stack heights are not the same throughout the core. Non-control chambers have a uniform stack height of 15. Control chambers have a uniform stack height of 20. Since we know two of the three values of the non-control chambers so far (that is, the bottom and master pins), we can simply subtract those values from 15 to determine our top pin for each of those chambers. Our results are seen in *Figure 4*.

Determining the top pins for the control chambers of Sargent 6300s is just as simple, thanks to the following formula:

Top Pin = 12 - Control Key Bitting

This formula can be arranged to ascertain a control key's bitting, which is helpful when decoding:

Control Key Bitting = 12 - Top Pin

Using this formula, we can quickly run through the top pin increments of the control chambers. Simply subtract the control key bitting from 12 for each respective chamber. The control key bitting in chamber 3 (the chamber third closest to the shoulder) is 7. $12 - 7$ gives us 5, which will be our top pin for the third chamber. The control key bitting in chamber 4 (the chamber fourth closest to the shoulder) is 4. $12 - 4$ gives us 8, which will be our top pin for the fourth chamber. Since we only have two control chambers, we are done. The results are shown in *Figure 5*.

1. TOP PIN						
2. BUILD-UP PIN						
3. MASTER PIN (if applicable)						
4. BOTTOM PIN						

Figure 1. This is a basic Sargent 6300 pinning chart.

CHANGE KEY	5	8	3	8	2	7
MASTER KEY	3	6	1	6	0	5
CONTROL KEY	3	6	7	4	0	5

Figure 2. Shown are the bittings that will be used to construct a pinning chart.

1. TOP PIN						
2. BUILD-UP PIN						
3. MASTER PIN (if applicable)	2	2	2	2	8	2
4. BOTTOM PIN	3	6	1	6	2	5

Figure 3. This chart shows the results through step one.

1. TOP PIN	10	7			5	8
2. BUILD-UP PIN						
3. MASTER PIN (if applicable)	2	2	2	2	8	2
4. BOTTOM PIN	3	6	1	6	2	5

Figure 4. Results through step two are shown. Minus the control chambers.

1. TOP PIN	10	7	5	8	5	8
2. BUILD-UP PIN						
3. MASTER PIN (if applicable)	2	2	2	2	8	2
4. BOTTOM PIN	3	6	1	6	2	5

Figure 5. Results are shown through step two, including the two control chambers.

1. TOP PIN	10	7	5	8	5	8
2. BUILD-UP PIN						
3. MASTER PIN (if applicable)	2	2	2	2	8	2
4. BOTTOM PIN	3	6	1	6	2	5
PIN STACK TOTAL	15	15	8	16	15	15

Figure 6. The author has added the pin stack totals of all chambers thus far.

CONSTANT STACK HEIGHT	15	15	20	20	15	15
PIN STACK TOTAL	15	15	8	16	15	15
BUILD-UP PIN	-	-	12	4	-	-

Figure 7. This chart shows those totals subtracted from 20 and their result, which is the build-up pin.

1. TOP PIN	10	7	5	8	5	8
2. BUILD-UP PIN			12	4		
3. MASTER PIN (if applicable)	2	2	2	2	8	2
4. BOTTOM PIN	3	6	1	6	2	5

Figure 8. This chart shows the build-up pin values added to the pinning chart, which is now complete.

1. TOP PIN	10	7	5	8	5	8
2. BUILD-UP PIN			12	4		
3. MASTER PIN (if applicable)	2	2	2	2	8	2
4. BOTTOM PIN	3	6	1	6	2	5
PIN STACK TOTAL	15	15	20	20	15	15

Figure 9. Check your work by verifying that the sum of all pin segments equals their appropriate constant stack height

Step 3: Determine Build-Up Pins

All that is left is to determine the build-up pins for our two control chambers. Since we have determined the bottom, master and top pins, then we have three

of the four pin segments required to combine each chamber. If we were dealing with cores using only a change key, then we would have two of the three pin segments required to combine each chamber. Either way, we are missing

“Control chambers have a uniform stack height of 20. That is, when all pin segments are added, their numeric value will equal 20.”

only one piece of information: the build-up pin.

As previously mentioned, control chambers have a uniform stack height of 20. That is, when all pin segments are added, their numeric value will equal 20. Since we are missing only the build-up pin value, we can add all known values (bottom pin + master pin + top pin for master keyed cores *or* bottom pin + top pin for non-master keyed cores) and subtract it from 20.

Our formulas would be:

Master Keyed: $20 - (\text{Bottom Pin} + \text{Master Pin} + \text{Top Pin}) = \text{Build-Up Pin}$

Not Master Keyed: $20 - (\text{Bottom Pin} + \text{Top Pin}) = \text{Build-Up Pin}$

I have broken this process down into smaller steps to really demonstrate this part of the method. In reality, you won't need to do this except for maybe your first few times. Pretty soon, you'll be able to do all of the math mentally and only need to transpose the results to your chart. Nevertheless, in *Figure 6*, I have added the pin stack totals of all chambers thus far. The non-control

CHANGE KEY	7	9	3	8	6	3
MASTER KEY	5	1	1	6	4	9
CONTROL KEY	5	1	5	4	4	9

Figure 10. Use these bittings to practice your own pinning chart.

chambers, which we have already completed, have their pin stack total represented in green. The control chambers, which we are in the process of completing, have their pin stack total (up to this point) represented in blue. *Figure 7* shows control chamber totals subtracted from 20 and their result, which is the build-up pin. *Figure 8* shows the build-up pin values added to our pinning chart, which is now complete.

If you would like to check your work — and I would advise you to until you get comfortable with this method — verify that the sum of all pin segments equal their appropriate constant stack height (*Figure 9*).

Example Number Two

Let's go through one more example. This time, try to construct the pinning chart on your own. *Figure 10* shows our new bittings. *Figure 11* should be your results after Step 1. *Figure 12* should be your results after Step 2. *Figure 13* should be your results after Step 3 and, thus, your completed pinning chart.

Conclusion

Just like last time with SFIC, it's that easy: three steps and two simple formulas. No need for apps, websites or software, although there is nothing wrong with any of those options. With that said, it's important to note that if you are able to

1. TOP PIN						
2. BUILD-UP PIN						
3. MASTER PIN (if applicable)	2	8	2	2	2	6
4. BOTTOM PIN	5	1	1	6	4	3

Figure 11. This chart should reflect your results after Step 1.

1. TOP PIN	8	6	7	8	9	6
2. BUILD-UP PIN						
3. MASTER PIN (if applicable)	2	8	2	2	2	6
4. BOTTOM PIN	5	1	1	6	4	3

Figure 12. This chart should reflect your results after Step 2.

1. TOP PIN	8	6	7	8	9	6
2. BUILD-UP PIN			10	4		
3. MASTER PIN (if applicable)	2	8	2	2	2	6
4. BOTTOM PIN	5	1	1	6	4	3

Figure 13. Your completed pinning chart should match this one.

create pinning charts for Sargent 6300s on your own, then you are self-reliant; you are not dependent on anything other than yourself. Don't be inconvenienced by a lack of cell reception or Wi-Fi, or by not having your computer in front of you. In the next installment in this series, I will show you how to apply virtually the same process described in this article to

knock out Sargent Degree pinning charts in — you guessed — *seconds!* ☺



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THE LAST BIG JOB

Greg Perry, CML, CPS, recounts a job installing electrified locks and pays tribute to a dear friend.

LOCKSMITHS HAVE ALWAYS PROVIDED “WIRELESS” ACCESS CONTROL IN THE form of conventional keyed locksets. Around 100 years ago, manufacturers designed electric strikes with solenoids to release the keeper, and this allowed for remote release with a voltage. The first ones used AC voltage, AC cycles or changes of direction. In the U.S., this cycle is 60 times per second, which vibrates the strike as it unlocks and locks to the AC current. Most people recognize the sound, and it became common to say, “Buzz me in.”

Electric strikes were and are still a common way to electrically release a door. Many of us have switched to electrified locksets instead, as they offer relatively the same security as the mechanical lock and don’t require modifying the frame. They also avoid some of the alignment issues between the dead latch and the strike keeper. Maglocks and a few other variations of electrified locks are also available.

The downside to electrified hardware is that it requires wires. Most hardware requires two 18-gauge wires for lock power, plus wires for the card reader or keypad and additional wires for the request-to-exit switch and door contact. All that wiring might need conduit and quite a bit of time to install it. The electronic access control market is changing. Some companies are switching or converting hardware to very low-power consumption, allowing them to be powered over ethernet, or POE



Figure 1. The back door presented the biggest challenge; the threshold was too tall to meet ADA requirements.



Figure 2. The standard hinges were worn out and needed to be replaced. With all the needed work, it made sense to replace the entire assembly. The other doors looked a little better, but the customer decided that to make all of them look better, it was best to replace them all.



Figure 3. The concrete was not poured level. The author generally loves a challenge, but it seemed best to pass this off to a concrete company to fix.



Figure 4. The existing threshold was over 2½" at one edge to the top.

compatible. Others are cutting the wire completely and using battery-powered locks with WiFi for communications. Alarm Lock Networkx has a great track record in this area.

The Job

This job started with a request for a couple of new Alarm Lock Networkx locks and changing the swing on a fourth door. But after looking at the doors and discussing with the customer, it turned into replacing the doors, frames and associated hardware plus the new Networkx locks — more than doubling the quoted price for the job and, more importantly, increasing the profit.

We quoted the job with four new doors and frames with all new hardware on the doors. This job had some challenges that resulted in us not being able to quote the

**“THE DOWNSIDE
TO ELECTRIFIED
HARDWARE IS THAT IT
REQUIRES WIRES.”**

job 100%. We needed to pull the frames and thresholds and install the new ones before determining the best choice for ramps. One was off significantly. Once the new frame and threshold were installed (which dropped the threshold height by over an inch), we found that the concrete walkway was too narrow to accommodate the length of the ramp required. It also sloped sideways to the door and humped in the middle. Everyone decided it would be best to have the

concrete replaced at the back door. The other doors did not require ramps once we installed new thresholds.

We started with the front employee's entrance, as it was closest to the parking lot and probably in the best shape. When doing large jobs, I use the services of a couple of friends who are the best finish carpenters in the area. These guys work fast: They had all four door assemblies replaced in about six hours. Once they had the first door swinging, they installed the threshold and sweep. We installed the panic bar and Alarm Lock Networkx lock. Once I completed this door, the carpenters were already finished changing out the second door and working on the third one. The second door work was nothing special: simply changing out the frame and door and then remounting the exit-only Von



Figure 5. The front employee entrance was in decent shape, but it was a residential-grade door.



Figure 6. Most residential thresholds are too tall. This one was more than an inch too tall to meet the ADA requirements for commercial buildings.



Figure 7. These guys are fast. The author was unloading the truck to stage tools and parts, and when he turned around, they were already hanging the first door. It was difficult for him to get all the pictures he wanted while installing the hardware.



Figure 8. The new threshold is the correct height to meet ADA requirements. Dropping it down avoided the need for a ramp.



Figure 9. The customer has several locations, and the author expects to install Networkx locks at the balance of their facilities. Since there was a batch to install, the author modified a Major Mfg. Von Duprin 99 install jig to add the additional holes for the Networkx outside trim. He started by adding a section to the top of the inside plate.



Figure 10. The top edge was drilled and tapped for socket head cap screws.

Duprin 99 panic hardware. Although the interior of the wall was not framed correctly, the carpenters grabbed some 2x4s I had in the truck and corrected the wall support issue.

The third door (the rear one) was ripped out, and we found the concrete was not

poured to the edge of the doorframe and was still too high to meet ADA requirements. The carpenters ripped a piece of wood to support the outside edge of the threshold. The customer maintenance crew will replace it with a piece of pressure-treated lumber prior to pouring new concrete.

The Product

Alarm Lock Networkx is available in configurations designed for panic devices, narrow-style aluminum locks and mortise or cylindrical locks. The battery packs normally last more than five years with normal usage. The locks



Figure 11. With the extension installed, the author added three hardened steel drill guide bushings.



Figure 12. The outside needed one extra guide bushing installed.



Figure 13. The author likes to put the paper template in place as a guide to ensure he's not drilling extra holes and to help with alignment or orientation. He then uses a center punch to mark the hole locations.



Figure 14. The modified Major Manufacturing drill guide is mounted to the door, centering the guide bushings over the center punch marks. The tool has two thumbscrews to adjust the location of the template on the door.



Figure 15. This image shows the outside of the completed front door. The author generally leaves painting to this customer, as they have a maintenance crew that includes painters.



Figure 16. The inside of the front door is shown, including weatherstripping.

support more than 5,000 users with three- to six-digit PINs or prox ID cards. The network gateways have up to a 900-foot range although, in most installations, 175 feet is probably the more likely distance. They offer a Networx Signal Meter test tool to assist with finding the optimum

gateway location for all the locks. If you need to go further, Alarm Lock offers expanders to the gateway or — perhaps, in some cases — it might work better to set up a new network connection on the customer's wired network. In most cases you will need to discuss the software and

equipment being installed on a customer's network with the IT department, if they will even let you into the network.

In many cases, you will not install or configure the IP addresses or install the software. That was the case during this install, as the customer already has



Figure 17. The existing second door is for an ambulance crew exit. It is hinged right hand reverse. The customer wanted the outside hardware removed and door swing changed to LHR for better flow to the emergency parking.



Figure 18. The inside of the newly installed door is shown. The installers reused the original panic without the outside trim.



Figure 19. The first thing the author does with the base plates is to run a tap to chase threads in the holes (Alarm Lock plates or coats them after they are tapped). Sometimes the screws don't go in smoothly, and they are so small they break very easily.



Figure 20. The outside of the back door is shown with the Alarm Lock Networkx outside trim installed. The carpenters trimmed out the door with new wood and caulked off the gaps, leaving painting to the customer's crew.



Figure 21. The battery pack and some of the electronics are mounted above the Von Duprin 99. Be sure to chase the threads in the inside base plate too.



Figure 22. The finished install of the back door is shown, including the battery pack cover.

**“AS MANUFACTURERS
DESIGN LOCKS THAT
USE BATTERIES
MORE EFFICIENTLY,
I BELIEVE WE’LL SEE
MORE AND MORE
WIRELESS SYSTEMS.”**

dozens of Networx locks installed. We supplied the trims to the customer’s IT department a few weeks before the install. The IT professionals configured them, and the trims were waiting for us at the location to install when we got there. Alarm Lock offers lots of training for installers and will also come out to the customer’s location (for a fee) to assist with the initial setup if needed.

I prefer hardwired systems, but I will admit that wireless is probably going to become the primary installation choice. It has already happened in the alarm side of the security industry. One of the issues is that locks require more power compared to alarms, so as manufacturers design locks that use batteries more efficiently, I believe we’ll see more and more wireless systems.

In Tribute to Bob

Many of you have seen my friend Bob Hayner mentioned in my articles. I have partnered with him on jobs for at least 15 years. This was my last big job with Bob. Unfortunately, he was diagnosed with cancer and lost his battle just a little over a month after we finished this install. Bob worked up until the day before he was admitted to the hospital, where he passed. I was able to help with a couple of small jobs that last day, and



Figure 23. In one of the author’s only pictures of Bob, he is shown at one of prior installations for the same customer. He was complaining about never having his photo taken, so the author snapped this to quiet him, never expecting it would be published. The author now wishes he’d used it earlier.

I suspected his time was short. I think he knew it too, but neither of us spoke about it. It was our tough guys’ way of saying goodbye.

Bob was a Vietnam veteran, husband and father. He held many jobs after being discharged from the Army in the 1960s but was a locksmith for the past 20-plus years. He opened his shop in Lone Pine, CA, for a little retirement income. Like many “retired” part-time locksmiths, his business grew, and he quickly was serving the entire Owens Valley. He eventually moved his shop to Bishop, CA.

I met him doing some safe work in Bishop, which is a couple hours’ drive from my shop. Bob was one of my best friends, but like many friends, it didn’t start out that way. We kept it business-only for many years, but over time, Bob would come to my shop, interrupting my weekends to ask me to help or look

at locks with him. I began to appreciate the time spent with him and learned a lot from him — and it was not always about locks. Sometimes it was about business and other times about life. Bob has been gone for almost a year now, and I truly miss those weekend “interruptions.” ☹



Greg Perry, CML, CPS, is a certified master locksmith and certified professional safe technician, working in all phases of locksmithing. He has taught various lock-

smith topics for 10 years. He currently works in the public sector as a locksmith. He has worked in the hardware industry since 1975 in wholesale, retail and institutional settings. He has written extensively for locksmith magazines and is a five-time *Keynotes* Author of the Year. Any opinions expressed by Greg in his articles are his alone and do not reflect any official government position.

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The “Surprise” and Other Tales

A roll-up gate, loose cylinders and a latch cause consternation. **By Tony Wiersielis, CPL, CFDI**

THIS MONTH, I’VE GOT THREE SHORT STORIES FOR YOU. I RAN INTO these incidents — one after the other — a few weeks ago, and there’s something to learn from each of them.

The first tale is the “surprise.” It’s about me versus a small roll-up gate, and the gate won, though I did manage to accomplish what I started out to do. Not catastrophic, but a little embarrassing.

The second deals with an aluminum door with the lock at the bottom (always a thrill, especially in the dead of winter), and how I fix a certain issue when I come across it. The third is a repair of an installation issue (caused by a door contractor) that resulted in a dangerous life safety issue in a school.

The Roll-Up Gate

Figure 1 is a shot of the roll-up gate at the college in Manhattan that I often write about. This is around the corner from my shop, in the cellar of the building. This thing was brand new and came with a standard mortise cylinder. I needed to change this out to a Best cylinder and core to fit the master key system.

You have to admit that this seems like a plum job: I don’t have to drive, and everything I need is a few steps away, not out in the winter weather, etc. Well, not exactly.

A momentary pause that relates to this: When I was in the Marine Corps, I knew a warrant officer who had small plaque on his desk. It was gift from a unit he had once been a member of. Amongst the engraving was a quote that he apparently used to throw around a lot: “I thought it would be easy, but no.”

Back to the story: So I built a core and 10 keys for this in advance, got the existing key and pulled up the gate. There was an inside cylinder as well. Not too much



Figure 1. The roll-up gate is shown.



Figure 2. Here, you can see two of the four screw holes on the rail.



Figure 3. This photo shows the access holes for the set screws and the Allen wrench on the now-upside-down rail.



Figure 4



Figure 5

Figures 4 and 5. The rail can be seen in the unlocked and locked position.

of a surprise; I just hadn't thought about it. I decided I might as well make up the second core first. I still had the pin arrays in the A4Calc app on my phone (more about that app later).

I came back to the gate after finishing the core and started feeling for the cylinder set screws, first with a small flat screwdriver and then with an Allen wrench. No dice. I tried shining light through one hole so I could see the other screw, but it didn't work very well.

I was getting frustrated when I noticed four screws along the top of the bottom rail. It looked like removing those screws would allow me to detach the rail. I figured it might make finding and loosening the set screws easier if I could turn the rail over, so I started taking the screws out.

I was holding the bottom rail with one hand as I took out the last screw. Suddenly, I heard a loud noise similar to a zipper on a jacket. I watched as the gate, now free of the rail, zoomed up on the roller above and disappeared with its enclosure. I hadn't thought about the roller being spring loaded.

The best way to describe this is to picture one of those old-fashioned window shades. To raise them, you pulled them down a little, and then the shade went up and stopped where you wanted. If you let go as you were going up, the shade would zoom up to the top, completely wrapped around the roller. The difference here is you could pull the shade down again if you could reach it; with the gate, it is not so simple.

Right about then, one of the building maintenance guys walked by, and I asked him to call the building superintendent on the radio. He came over, and we tried to figure out if we could get the spring tension back. Neither of us had ever done it, so he decided to put in a service call for the gate and not worry about it.

Meanwhile, I had the bottom rail off, so I figured I might as well swap out

the cylinders. *Figure 2* shows two of the four screw holes on the rail. The screws went through these holes to attach to the bottom of the gate. *Figure 3* shows the access holes for the set screws and my Allen wrench on the now-upside-down rail.

Figures 4 and 5 show the rail in the unlocked and locked position. It's important to know that the locking pin won't lock the gate anywhere but at the bottom. There's a built-out strike plate there on both sides of the rail that the gate rides up and down in.

Figure 6 is a view from the top of the rail at the two new Best cylinders. *Figure 7* shows a view of the very simple locking mechanism. If I had gotten clearer pictures, I would have shown you the sequence of operation, but it didn't work out.



Figure 6. This image provides a view from the top of the rail at the two new Best cylinders.



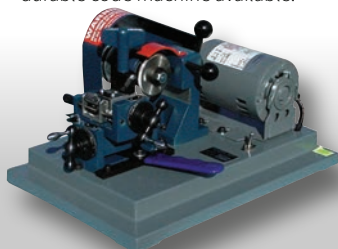
Figure 7. The very simple locking mechanism can be seen.

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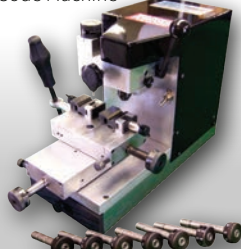
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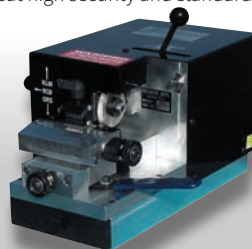
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Figure 8. A Best cylinder is installed on the bottom of an aluminum door.



Figure 9. The access hole for the set screw can be seen.



Figure 10. This image shows the replacement screw.



Figure 11. The author drilled a shallow hole into the cylinder where the set screw contacted it.



Figure 12. This photo shows how much deeper into the cylinder the screw fits.

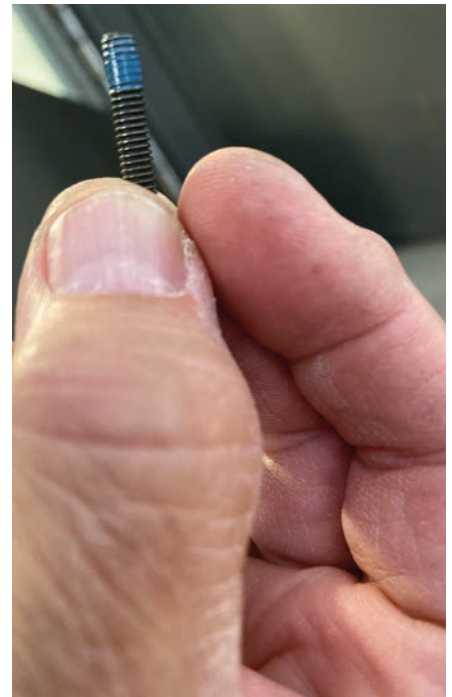


Figure 13. To avoid repeated callbacks for loose screws, use blue Loctite on them.

Other Tale Number 1

Figure 8 is a Best cylinder installed on the bottom of an aluminum door. The issue was the cylinder coming loose and the difficulty in reaching the set screw with a standard long Allen wrench. Figure 9

shows the access hole for the set screw, and Figure 10 is the old screw with the much longer one I replaced it with.

Figure 11 shows how I drilled a shallow hole into the cylinder where the set screw contacted it. Figure 12 shows

how much deeper into the cylinder the screw fits. Doing this makes it more difficult to unscrew the cylinder with channel locks.

An added benefit is that if the screw loosens again, the cylinder won't



Figure 14. The latch is installed too low on the door. The strike is also not centered on the latch, though it will still work.



Figure 15. The trigger is on the wrong side of the strike, having slid under it.



Figure 16. Two strike shims are packed with every strike.

immediately start to spin. It will still lock and unlock the door, but the person using the key will notice the cylinder is loose and hopefully put in a work order.

To avoid repeated callbacks for loose screws, use Loctite on them, as shown in *Figure 13*. Use blue Loctite only; use red Loctite on a small screw, and you'll never get it out again. I've actually stripped Allen screws that were installed with the red stuff.

Other Tale Number 2

The following series of pictures shows you how to correct an improper installation of the top latch on a PHI surface vertical rod panic device. You usually find this when other trades install these devices without reading the directions and then walk away without checking the operation.

Figure 14 shows the latch installed too low on the door, as evidenced by the gap between the top of the latchbolt and the back of the strike. *Figure 15* shows the trigger — which flips the bolt up when it contacts the strike — on the wrong side of the strike, having slid under it. This causes the trigger to jam against the strike, and the door won't open.

Figure 16 shows the two strike shims that are packed with every strike. Had the installer actually checked operation after installation, he might have solved the problem with these shims. You might have noticed that I didn't install these panic bars, but I have the shims. That's because I save any that I don't




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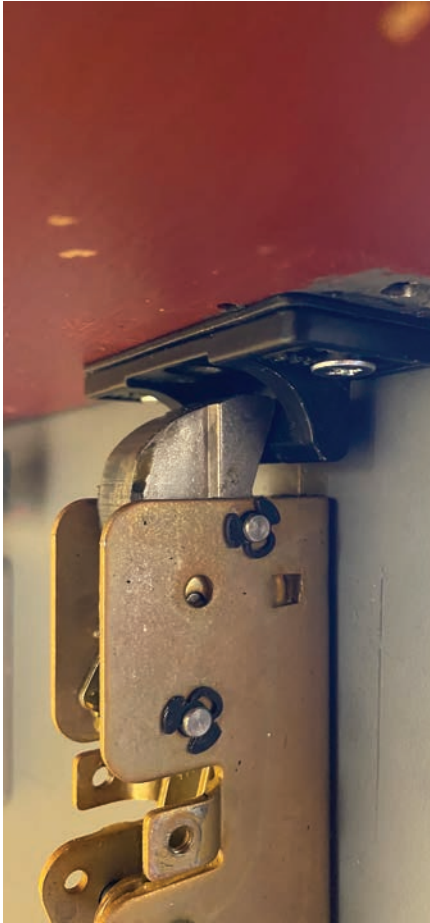


Figure 17. This photo shows an oblique view of the latchbolt engaged and a shim under the strike.



Figure 18. The trigger can't slide under the strike and jam anymore.

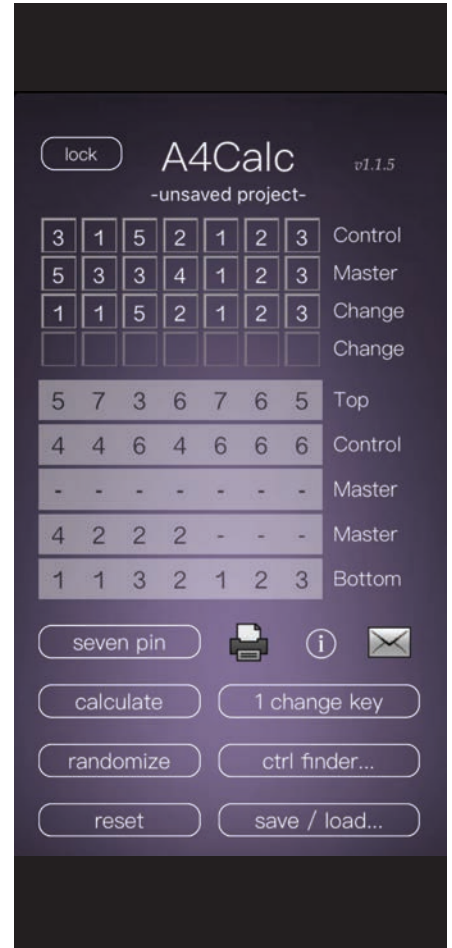


Figure 19. This image is a screen shot of the A4Calc app.

use on my own installations for occasions like this. I'd advise you to do the same. FYI: This type of strike is identical to the PHI rim device you'd use on a single door or mullion.

Figure 17 shows an oblique view of the latchbolt engaged and a shim under the strike. In Figure 18, you can see that the trigger can't slide under the strike and jam anymore. After the pictures were taken, I added a second shim on both doors to make sure it wouldn't happen again.

For those of you who might be wondering what A4Calc is, take a look at Figure 19, which is a screen shot of it. I put in some random numbers to show you how it works. I can calculate this with a pencil

and paper several different ways, but this app makes it ridiculously fast. It also has “control finder” key calculator and other handy stuff as well.

I have a buddy who's been doing Best exclusively for 30 years and is rather set in his ways. We were building a lot of cores over a three-day period and he penciled out every pinning array. I told him to read me the biting numbers as he wrote them down and I tapped them into the app. Before he could start his calculation, I had it done. From that moment on he was hooked. Whenever we did another core all we had to do was change the change key biting and it recalculated.

Phil Domenici is the guy who thought this up, which makes him a genius, at

least to me. I've got A2Calc and A4Calc, but I just found out today that he's got a bunch of others that I think I might get as well. Take a look at the iPhone App Store and see what he has. The cost is minimal and the time saved is immense. Last thought on this: Before you hand these apps to an apprentice, make sure they can do it with a pencil first. ☞



Tony Wiersielis, CPL, CFDI, has more than 30 years of experience and has worked in most phases of the trade throughout the New York metropolitan area. He was named *Keynotes* Author of the Year for 2016.



ALOA

ALOA Security Professionals Association, Inc.

Membership Application

CANDIDATE PLEASE TYPE OR PRINT

Name: ☐ Mr. ☐ Mrs. ☐ Ms. First _____ Last _____ MI _____ Designation _____

Business Name _____

Mailing Address _____

City _____ State _____ Zip Code _____ Country _____

Work Phone _____ Home Phone _____ Fax _____

Email Address _____ Website _____

Date of Birth (required) _____ Place of Birth _____ Social Security # (required) _____

US Citizen? ☐ Yes ☐ No If No, citizen of what country? _____

ALOA occasionally makes its members' addresses (excluding phone numbers and email addresses) available to vendors who provide products and services to the industry. If you prefer not to be included in these lists, please check here: ☐

PROFESSIONAL INFORMATION

Please check the description that best describes you (check all that apply)

- | | | |
|--|--|---|
| <input type="checkbox"/> Locksmith Owner | <input type="checkbox"/> Automotive | <input type="checkbox"/> Employee Technician |
| <input type="checkbox"/> Electronic Security | <input type="checkbox"/> Security Professional | <input type="checkbox"/> Mechanical Door Locks & Hardware |
| <input type="checkbox"/> Institutional | <input type="checkbox"/> Safes | <input type="checkbox"/> Investigative |
| <input type="checkbox"/> Other _____ | | |

Are you licensed to perform Locksmith/Access Control work in your state? ☐ Yes ☐ No If Yes, License # _____

Business License # _____ EIN # _____

Any other license held by applicant (Contractors Lic., Low Voltage) _____

Any other states you do business in and licenses held in those states _____

List all phone numbers used by your company/companies: _____

Number of Employees _____ ☐ Store Front Business ☐ Mobile Only

How did you learn locksmithing/access control? _____

How long have you worked in the locksmithing/security industry? _____

ALOA member Sponsor Name/Who introduced you to ALOA?

Sponsor Name (Required) _____ ALOA Number _____ Years known _____

Have you ever been a member of ALOA before? ☐ Yes ☐ No If Yes, when? _____ ID #, if known _____

Are you a member of any local locksmith association? ☐ Yes ☐ No If Yes, name of association: _____

Give the names and phone numbers of two industry-related references:

Name _____ Company _____ Phone Number _____

Name _____ Company _____ Phone Number _____

IMPORTANT: Have you ever been convicted of a felony? ☐ Yes ☐ No If yes, please give details on a separate sheet.

All convictions are reported to the Advisory Committee for review.

A routine background check is performed on all new applicants, unless you live in a State in which passing a background check is a part of the licensing requirements. Non-US citizen background checks are required. If you live in a country that does not allow third party background checks, you will be required to submit an authentic report upon request (no copies/duplicates allowed) before final membership approval can be granted. A copy of your business permit/license, license number, business card, company letterhead or suitable proof of employment in the locksmith/access control business must accompany application.

TYPES OF MEMBERSHIP AND REQUIREMENTS

Check only one box from the categories listed below:

Active Membership

Persons actively engaged in the locksmith/access control industry for a minimum of two years and have achieved one of ALOA's recognized program designations.

- | | | | |
|--|-------|--|-------|
| <input type="checkbox"/> US and US Territories | \$255 | <input type="checkbox"/> I elect to Go Green | \$230 |
| <input type="checkbox"/> International | \$270 | <input type="checkbox"/> I elect to Go Green | \$200 |

International Association of Investigative Locksmiths Membership

Must be an ALOA Member in order to join the IAIL.

- | | |
|--|------|
| <input type="checkbox"/> US and US Territories | \$55 |
|--|------|

Probationary Membership

Persons undergoing training to qualify as an Active member, who have not received one of ALOA's recognized program designations. No person shall be a probationary member for more than three years.

- | | | | |
|--|-------|--|-------|
| <input type="checkbox"/> US and US Territories | \$255 | <input type="checkbox"/> I elect to Go Green | \$230 |
| <input type="checkbox"/> International | \$270 | <input type="checkbox"/> I elect to Go Green | \$200 |

Probationary Membership – No Sponsorship Required

Persons undergoing training that are new to the industry and do not know any Active member for sponsorship. Probationary period extended from 90 days to one (1) year. Probationary status lifted if sponsor acquired within year. Must obtain license if residing in State requiring licensure. A second background check will be performed by ALOA after 2 years of the 3 year maximum term. Any violation of ALOA Code of Ethics during probationary period will result in immediate termination of membership.

- | | | | |
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| <input type="checkbox"/> International | \$270 | <input type="checkbox"/> I elect to Go Green | \$200 |

Allied Membership

Persons whose position in the locksmith/access control industry relates to locksmiths, and cannot qualify for any other class of membership.

- | | | | |
|--|-------|--|-------|
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| <input type="checkbox"/> International | \$270 | <input type="checkbox"/> I elect to Go Green | \$200 |

Note: Your application will be processed with a 90 day waiting period.

Any institutional locksmith not using his/her work address must submit a letter from employer stating that you are an institutional locksmith.

DUES AND FEES

An application fee and the appropriate dues must accompany the application in order for processing to begin.

Application Fees Schedule:

US and US Territories	\$70
Canada, Denmark, Ecuador, New Zealand	\$160
Australia, Bahamas, Barbados, Belgium, Belize, Bermuda, China, France, Haiti, Philippines, UK	\$210
Israel, Korea, Papua New Guinea, Saudi Arabia, United Arab Emirates	\$360

Applicants from countries not listed must submit background check and report from local Law Enforcement with application.

FINAL CHECKLIST

- | | |
|---|-------|
| <input type="checkbox"/> Required Proof of Employment in Industry | _____ |
| <input type="checkbox"/> Annual Dues Amount | _____ |
| <input type="checkbox"/> Application Fee | _____ |
| Total Amount Due | _____ |

METHOD OF PAYMENT

- ☐ Check ☐ MasterCard ☐ Visa ☐ American Express ☐ Discover

Card Number _____ Expiration Date _____ SEC _____

Print Name on Card _____

Signature _____ Date _____

I understand and consent that in the course of reviewing this application ALOA may review publicly available information for the purpose of verifying the information submitted and do a background check.

I certify that all statements are true and, if accepted as a member, I agree to abide by the rules, regulations, and Bylaws of ALOA, and further agree to adopt the Code of Ethics of ALOA as my own, and adhere to it to the best of my ability. Should my membership be discontinued, I agree to return my membership card and cease use of all ALOA insignia.

Signature _____ Date Signed _____

Dues, Contributions, Gifts are not deductible as charitable contributions for Federal income tax purposes. Dues payments are deductible as an ordinary and necessary business expense. However, donations made to the Legislative Action Network ARE NOT deductible as a charitable gift or business expense.

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Stanley Security Solutions Inc.

Phone: 317-572-1934
 Fax: 317-578-4909
www.stanleysecuritysolutions.com

STRATTEC Security Corp.

Phone: 414-247-3333
 Fax: 414-247-3564
<http://aftermarket.strattec.com>

The Diagnostic Box

Phone: 407-375-0333
www.thediagnosticbox.com

Vanderbilt Industries

Phone: 973-316-3900
 Fax: 973-316-3999
www.vanderbiltindustries.com

WFE Technology Corp.

- WAFERLOCK
 Phone: 866-422-300362
www.waferlock.com

Xhorse USA INC.

Phone: 407-608-4288
www.xhorse.com

SERVICE ORGANIZATIONS
A-Rein, LLC

Phone: 702-545-5605
omgate.a-rein.com

Academy Locksmiths, Inc.

Phone: 714-701-1300
 Fax: 714-701-1325
www.academylocksmiths.com

ASSA Technical Services Inc.

Phone: 724-969-2595
www.assatechnicalservicesinc.com

FieldEdge, Formerly deSCO

Phone: 888-614-0184
www.fieldedge.com

Instafob - Key Fob Copy Solutions

Phone: 619-552-2211
www.instafob.com

Lang Labs Inc.

Phone: 780-978-1309
www.langlabs.ca

Lockmasters Security Institute

Phone: 859-887-9633
 Fax: 859-884-0810
www.LSleducation.com

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Mail To: PO Box 66257 Mobile, AL 36660

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Classified Advertising Policy

Classified advertising space is provided free of charge to ALOA members and for a fee of \$3 per word with a \$100 minimum for nonmembers. Classified ads may be used to advertise used merchandise and overstocked items for sale, "wanted to buy" items, business opportunities, employment opportunities/positions wanted and the like. Members or nonmembers wishing to advertise services or new merchandise for sale may purchase a "Commercial Classified Ad" for a fee of \$4 per word with a minimum of \$100.

Each ad will run for three consecutive issues. For blind boxes, there is a \$10 charge for members and nonmembers. All ads must be submitted in a word document format and emails to adsales@aloea.org by the 15th of the month two months prior to issue date. ALOA reserves the right to refuse any classified advertisement that it deems inappropriate according to the stated purpose of the classified advertising section.

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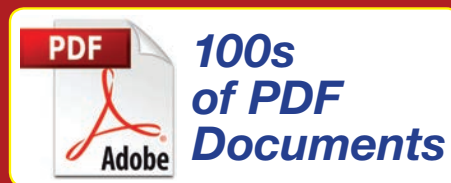
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Big Red	page 48	www.bigredsafelocks.com	(877) 423-8073
Bullseye S.D. Locks	page 48	www.bullseyesdlocks.com	(800) 364-4899
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Detex	page 11	www.detex.com	(800) 729-3839
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Southern Lock & Supply	page 13	www.southernlock.com	(727) 541-5536
Stone & Berg	page 53	www.stoneandberg.com	(800) 225-7405
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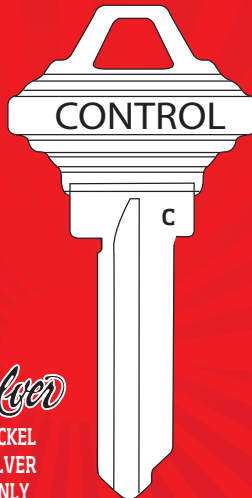
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